
Biolmg Storage Server

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מכון ויצמן למדע
WEIZMANN INSTITUTE OF SCIENCE

Overview

Central repository for raw imaging data that provide service for all core facilities at the Weizmann Institute

Data is copied automatically without conversion from all imaging resources

Users can **document, search, access** and **share** data from anywhere on campus

Biolmaging Service at WIS

Infrastructure

- *Biolmg* Storage Server
- Licenses for Image Analysis Software
- Public Image Analysis Workstations

Training and help-desk

Image Analysis

- Simple image analysis using existing tools
- Adaptation of existing tools to the specific data
- Development of new algorithms and user interface

The BioImaging Community at WIS

Distributed and Diverse facilities

- Diverse imaging techniques
- Distributed imaging facilities
- Many Instrument's administrators
- Diverse image visualization and analysis tools

Common Problems

- Hard to find data
- Data storage on the instruments got full quickly
- Use of Disk-on-keys \Rightarrow Computer Viruses
- Data duplication on many computers

Objectives

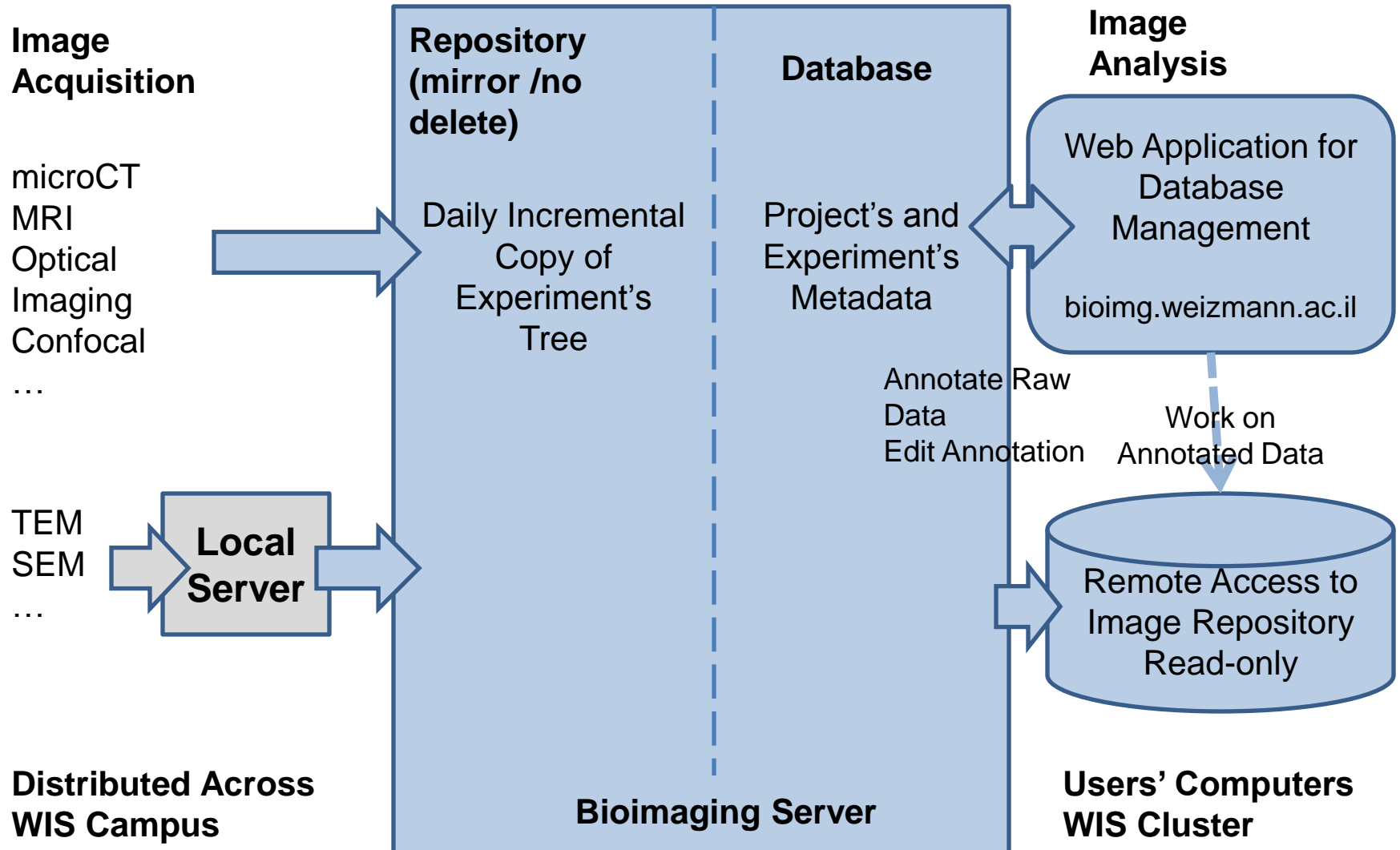
To Improve **storage and retrieval of data** from existing imaging infrastructure at the core service, departmental facilities and individual research lab level.

To set up an **annotation interface**, to add metadata, enabling **organized and effective searching and retrieving**, and improved management of infrastructure and data.

Main Features

- Central repository for raw Imaging data.
- Data is copied automatically from all connected instruments and users – No user initiation is needed
- Data is saved as is - No file conversion is applied
- Data is organized on *BioImaging* by Instruments, users, and experiments
- Users can document, search, access and share data from anywhere on campus.
- Use your favorite visualization and analysis tools - No built-in Analysis tools.
- Analyzed data is not saved on *BioImaging*
- Authentication is done by the institute's LDAP system
- Data is automatically shared with the PI
- Data can be shared with people out of campus using http-based service

Biolmg Structure



Data Organization and Access

- Data is stored by Instruments, Users and experiment
- Each experiment is a folder that can contain any type of files or sub-folders
- Main entity is experiment, experiments are logically organized by Projects
- Logical links to data are created from user folder
- Data Access by mounting the private user folder
- User's view:
 - Choose to organize by Project or Instrument
 - Choose which experiments to show, others are hidden
 - Search experiments by: Date, Project, Textual documentation
- Access, Search and Annotations at the experiment level
- User's folders are read only

Quick Start for Users

At the microscope

- Create new sub-folder for each experiment:
D:\UserData\ofrag\20131008_BIAS_Exp

Data Annotation through the website

- Assign the experiment to a project (“Annotate Raw Data”)
- Add Notes and share data (“Edit Annotation”)

Data Access

- Virtual disk mount
- Share with other users in WIS
- Send by mail to other users

What *Bioimg* offers to users ?

Simplicity: single interface and access for all equipment

Access: anywhere over network, inside and outside WIS

Privacy: protected access to own data

Sharing: shared access to experiments and projects

Export: send experiments over email

Documentation: save notes with the data

Search: locate data by user, notes and date

Personalization: own preferences tailor Bioimg behavior

Awareness: email notification on availability of new data

Actualization: data copied up to 8 times a day

Organization: PIs have access to all their group data

But ...

Analyzed data not included

Bioimg for Facility Administrators

Serenity: No Need to worry if users downloaded their data and about acquiring more hard drives

Security: No more disk-on-keys

Access: Administrators can access all the data acquired on the instrument

Sharing: Easy way to share data they acquire for users

Organization: Data is organized by userids in a common way across all instruments

Reliability: RAID, mirror

Bioimg for System Administrators

Adding New Instruments

Instrument side: creating folders, sharing, setting firewall exceptions

***Bioimg* side:** simple setting using the browser based application

Adding New Users

Mostly automatic, an option for manual addition of users using the website

The website allows also

- Testing resource access
- Statistics
- Activity Log

Biolmg Statistics

- ~45 instruments
 - Core facilities, Departmental Microscopes, Lab microscopes
 - MRI, CT, Electron Microscopy, light microscopy, Digital Histology, FACS
- 800+ users
- Data: 70TB (out of 160TB)
- Over two years

Contact Information

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Bioinformatics

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