

www.proteios.org an open source proteomics project

Per Gärden, Samuel Andersson, Jari Häkkinen Lund Swegene Bioinformatics Facility, Sweden

Rikard Alm Biochemistry, Lund University, Sweden

Frank Potthast Functional Genomics Center, Zürich, Switzerland

Fredrik Levander Lund Proteomics Resource Facility, Sweden

Background

2004-04-01 <http://www.proteios.org/> #1

Proteios - The Open Source Proteomics Initiative

Proteios - Concept

proteios is an initiative for the development of a comprehensive open source system for the storage, organisation, analysis and annotation of proteomics experiments. The **proteios** platform is based on concepts published by Chris Taylor et al. in *Nature Biotechnology*, March 2003, Volume 21 Number 3, 247-254.

In short, **proteios** manages biomaterial information, raw data, images, analysis results, and provides integrated and "plug-in"-able protein identification, data viewing and analysis tools. The organisation and interface of **proteios** is designed to closely follow the natural work-flow of the proteomics scientist, and is compatible with both LCQ and 2D-gel experiments.

Proteios - Architecture

proteios is based on a multi-layered and very flexible architecture. It is a client-server application, where the client is installed and run as a Java program. The server side is one or several relational databases. This architecture enables users to be in full control of the application when running a local database. At the same time the **proteios** database connection scheme enables users to share data both in groups and globally.

On top of primary data handling offered by tools like PEDRo, **proteios** offers annotation handling and the ability to be connected to several concurrent data sources.

proteios and a corresponding database server can be installed on any local PC in a laboratory environment. The server is accessed via a Java client using personal login accounts with administrated access levels. With her own account, each user can enter data into the database, group experiments together into projects, and in a uniform and streamlined fashion, apply filters, annotate, and run analyses. Users can choose to share a relational database form (e.g. samples, data, experiments, files, etc) with other users to facilitate online collaboration.

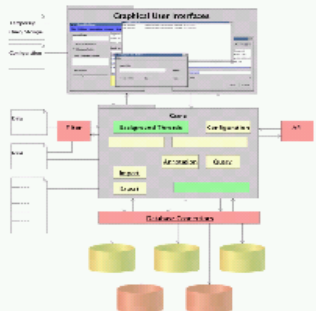


Fig. 1 - Architectural Overview

Proteios - License

2004-04-01 <http://www.proteios.org/> #2

proteios will be distributed under the GNU General Public License (GPL) version 2.

Proteios - Release

proteios is currently in an early development stage. The most recently updated information can be found at <http://www.thep.lu.se/~per/thep/proteios/index.html>

Proteios - How to cite

Please refer to www.proteios.org and the PEDRo site pedro.man.ac.uk.

Proteios - Future plugins and modules



Spectroclonal Differential Peptide Display and Biomarker Discovery
 Watcher Automatic detection of SCAT pairs



Proteios - Contact

Want to join? Contact the project leader, Per Gårdén

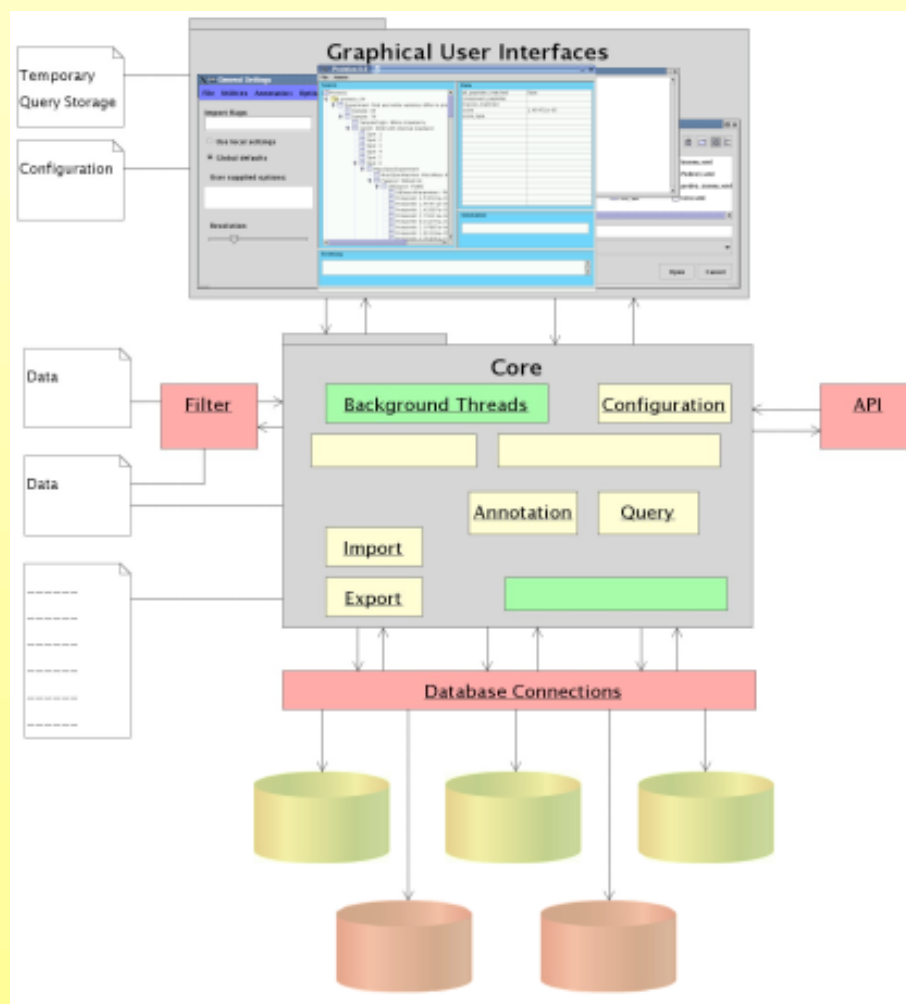
Proteios - Cooperating Institutions

Lund Sweborg Bioinformatics Facility bioinfo.thep.lu.se
 Computational/Collaborational Laboratory www.colab.ethz.ch
 The Lund Proteomics Resource Center www.proteomics.sweborg.lu.se
 Functional Genomics Center Zurich www.fgc.ch
 Strategic Excellence Projects www.sap.ethz.ch

Architectural Overview



Features

- User accounts - IP protection
- Cross platform - cross database (Java/Hibernate)
- Data access from any computer
- Import/export of PEDRo/validation
- URIs to raw data files, e.g. mzXML, gel images, ...
- Will be compliant to PSI standards

Analysis - Plug-ins

- Analysis tools will be implemented
- Plug-in framework
 - Mascot
 - ICATcher
 - PeptideProphet, ProteinProphet
 - PSI-MI: Cytoscape
 - ...

Status

- Version 0.4 (current)
 - Full, automatic PEDRo import/export
 - No analysis tool yet, gel biased
- Version 0.5 (end of May, 2004)
 - Updated GUI
 - Import of stepwise experimentation data
 - Query functionality
- Near future version
 - Mascot plug-in