

The G-Node Infrastructure Services: Efficient Research Data Management for Neuroscience and Beyond

Achilleas Koutsou, Michael Sonntag, Christian Garbers, Thomas Wachtler
German Neuroinformatics Node, Department Biologie II, Ludwig-Maximilians-Universität München, Germany

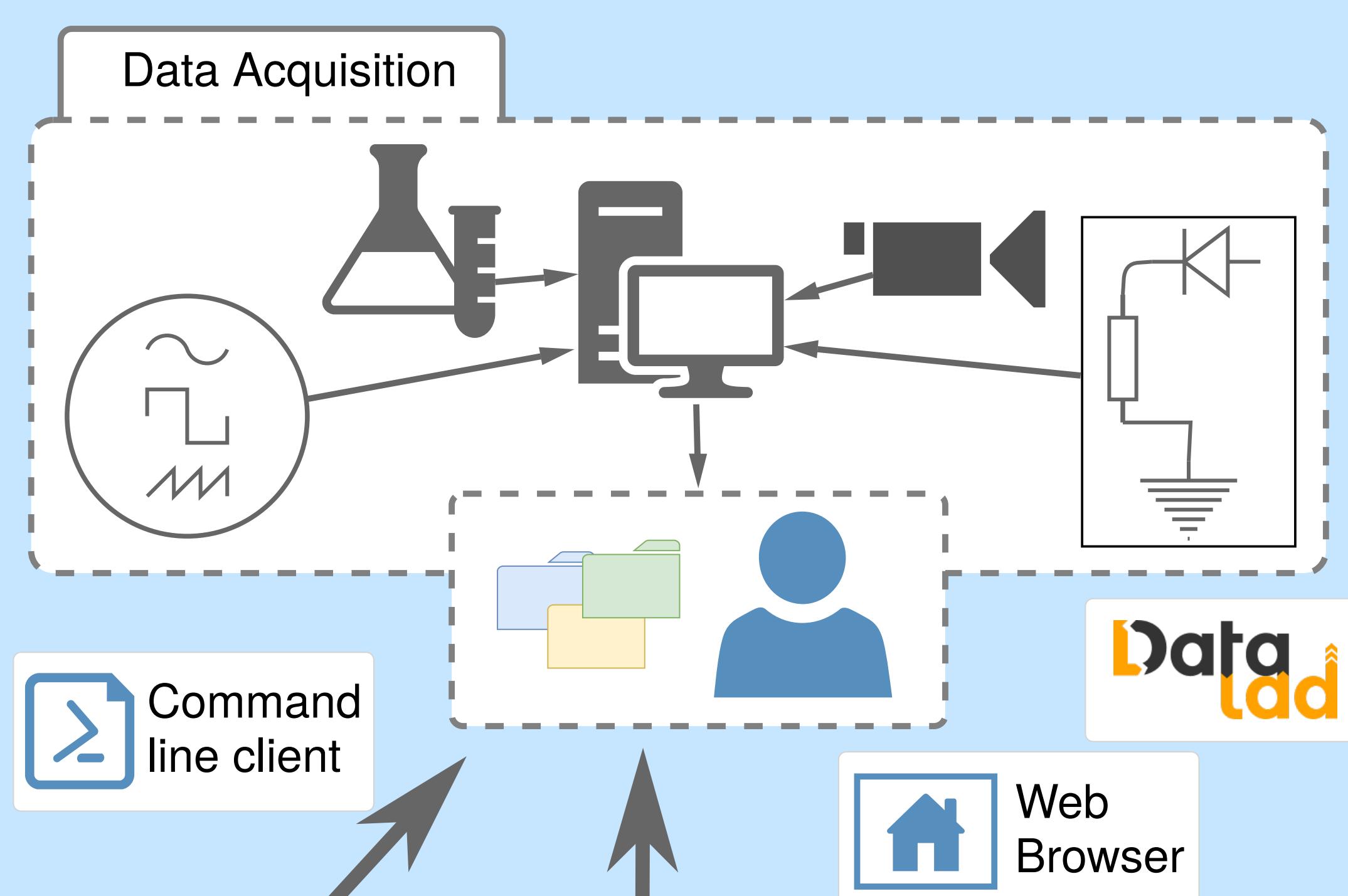
Maintaining reproducible data workflows while keeping data in sync, backed up, and easily accessible from within and outside the lab is a key challenge in research. To help minimize the time and effort required for these tasks, the GIN services provide support for comprehensive, reproducible and versioned management of scientific data throughout the data lifecycle.

GIN Services for Data Storage, Collaboration and Data Publication



GIN core features

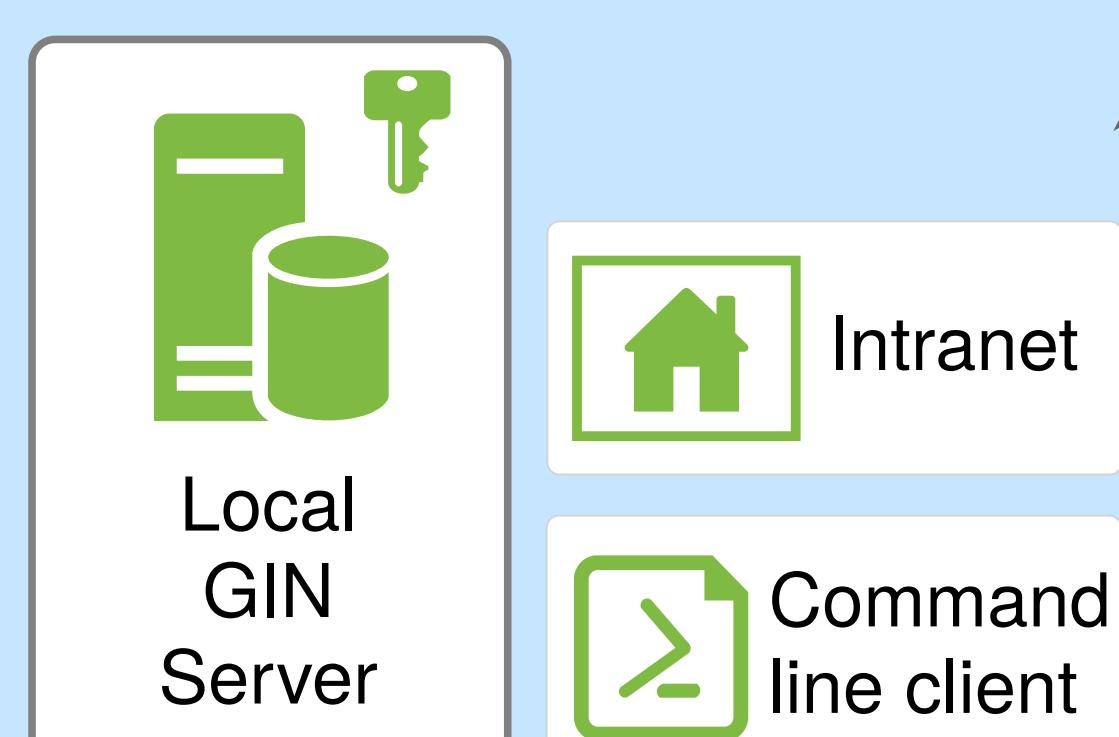
- Access data from any location
- Built-in versioning
- Platform and format independent
- Secure access
- Public and private repositories



Supporting research data management throughout the data lifecycle

- Version control for code and data
- Efficient collaboration through access control and tracking of changes
- Validation services to ensure data quality
- Data publication (DOI) with a button click

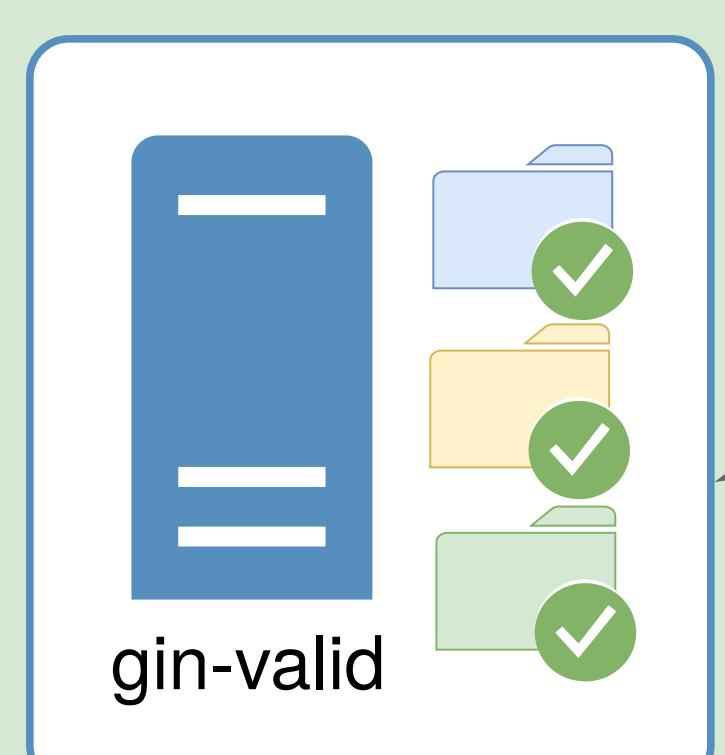
In-lab Local Instance



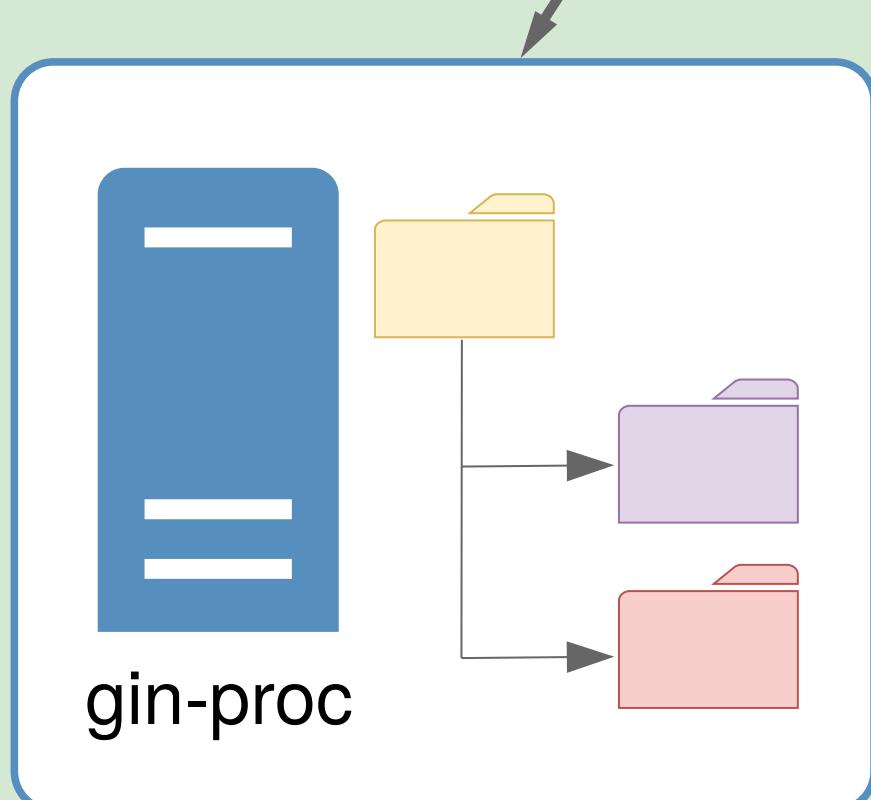
Local Hosting

- GIN is open source
- prebuilt docker containers for easy installation
- use your own data storage

Automation and Validation



Data validation service
valid.g-node.org



Data processing service
proc.g-node.org

Automated Data Validation

- Automatically runs validation on selected repositories
- Supported validation formats:
 - BIDS
 - odML
 - NIX
- Easily extensible to more formats
- Format validation contributions are welcome

Automated Data Processing

- Automatically runs pre-defined processing pipelines
- Triggered on repository changes
- Automatically returns specified results
- Based on SnakeMake and DroneCI

gin.g-node.org

GIN Platform Server



Data Publication and Findability



DOI service
doi.g-node.org



Data search service
gin.g-node.org/explore/data

Findable Data via GIN

- Automatic indexing of text based files
- Online search for repository content
- Interactive rendering of markdown formats

Data Publication

- Persistent identifiers (DOI)
- Easy DOI assignment
- Link to publications



Resources and References



Contact:
dev@g-node.org

Poster presented at
RDA-DE 2020



Except for third-party logos,
content is licensed under
CC-BY 4.0

GIN (RRID:SCR_015864):
BIDS (RRID:SCR_016124):
NIX (RRID:SCR_016196):
odML (RRID:SCR_001376):
SnakeMake (RRID:SCR_003475):
DroneCI: <https://drone.io/>

<https://gin.g-node.org>
<http://bids.neuroimaging.io>
<http://www.g-node.org/nix>
<http://www.g-node.org/odml>
<https://snakemake.readthedocs.io>
<https://drone.io/>

Supported by BMBF grants 01GQ1302, 01GQ1509

