

Michael Sonntag<sup>1</sup>, Achilleas Koutsou<sup>1</sup>, Christian Garbers<sup>1</sup>, Christian J. Kellner<sup>1</sup>,  
Adrian Stoewer<sup>1</sup>, Jan Grewe<sup>2</sup>, Thomas Wachtler<sup>1</sup>

<sup>1</sup>German Neuroinformatics Node, Department Biologie II,  
Ludwig-Maximilians-Universität München, Germany;  
<sup>2</sup>Institut für Neurobiologie, Universität Tübingen, Germany

## Overview

Management of scientific data, including consistent organization, annotation and storage of data, is a challenging task. Accessing and managing data from multiple workplaces while keeping it in sync, backed up, and easily accessible from within or outside the lab is even more demanding. To minimize the time and effort scientists have to spend on these tasks, we here present the **GIN (G-Node Infrastructure)** services [1], a **free data management system** designed for comprehensive and reproducible management of scientific data. It keeps track of changes to the contents and organization of the files and provides secure remote access to the data.

Once a directory has been put under GIN control, the contents will be synced to a dedicated GIN server. With proper authorization, data can be accessed and changed from remote clients, making it easy to work from multiple workplaces while keeping all data at hand and in sync. Data can be managed from web and file browsers as well as through a command line interface, which enables integrating data management and access into the data acquisition and analysis procedures. The system handles any kinds of directory structures and file types, and tracks all changes, using Git [2] tracking mechanisms.

## Features

### Cloud like service for scientific data

The gin service provides all the main features expected from a cloud service

- Access data from any location
- Platform independent
- Secure access
- User management
- Backup
- Public and private repositories



### Convenient workflow integration

By using the provided command line client any changes can be uploaded to the server manually, but can also be integrated into an automated data analysis workflow.

Access from work, home, conference, ...

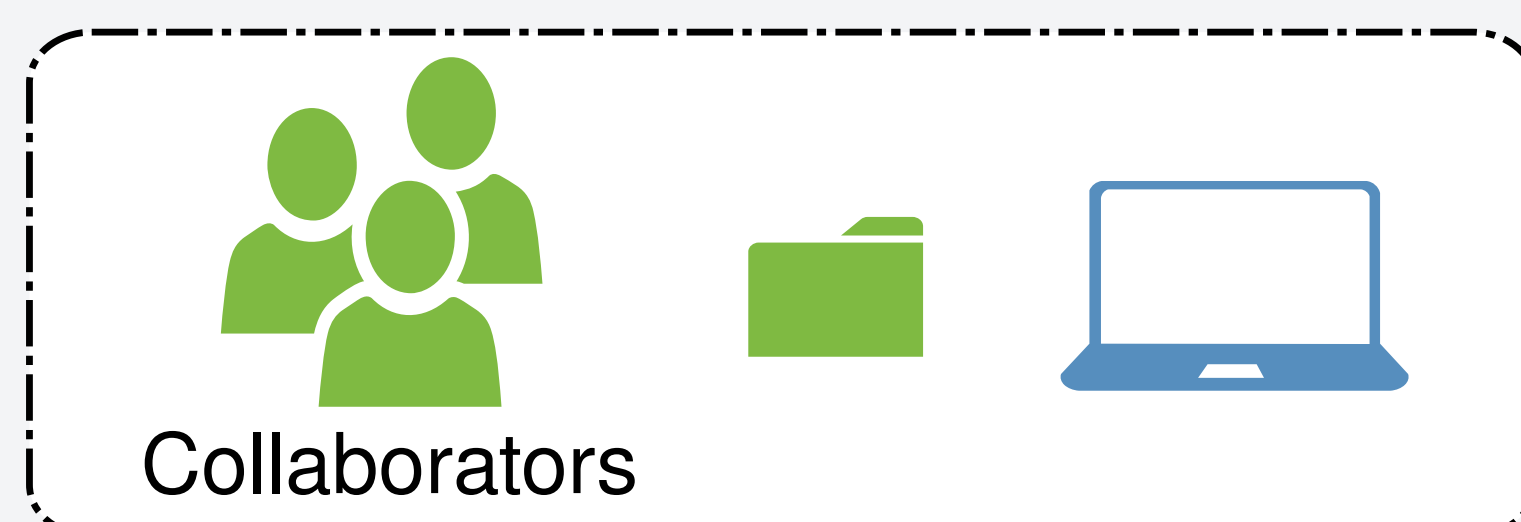


### Built-in versioning

The gin service is based on git [2] and git-annex [3]; all of your data is automatically versioned:

- When changing your files, any upload to the server creates a version checkpoint of your content.
- Using this history you can always go back to an earlier version.

## Share and Collaborate



Sharing of scientific data and collaboration are the main goals of the gin services!

### Collaborate

- Share your public or private repositories with other users of the GIN service making it easy to jointly work on a project.
- You can control the levels of access any of the collaborators will have over the data you want to share.

### Share your data, make it public!

- If you want to make your data accessible to the world, just make your repository publicly available.
- The data will be accessible, but only you will be able to change it.

## Make your research citable



G-Node DOI Service

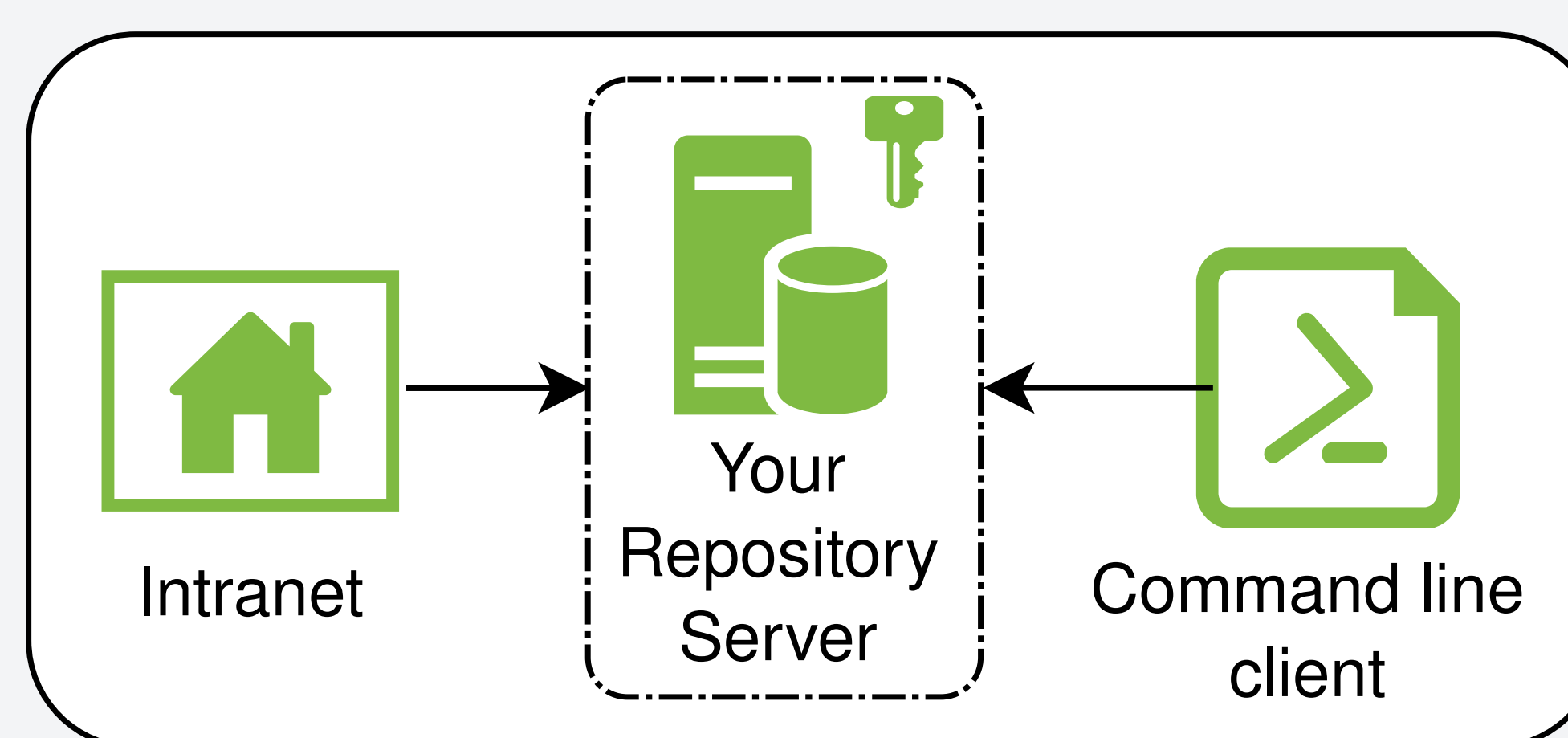
### Publish any part of your research

The gin services promote the idea of publishing any scientific data. By assigning a DOI (Digital Object Identifier) [4] any resource can be permanently identified and made available for everyone at anytime.

### For your research this means

- Make any of your **data sets citable!** The gin services host your data and provide a permanent link.
- Make any other resource from your everyday work persistently available. By assigning a DOI, you can also make your scripts, software or laboratory protocols citable and discoverable under your name.

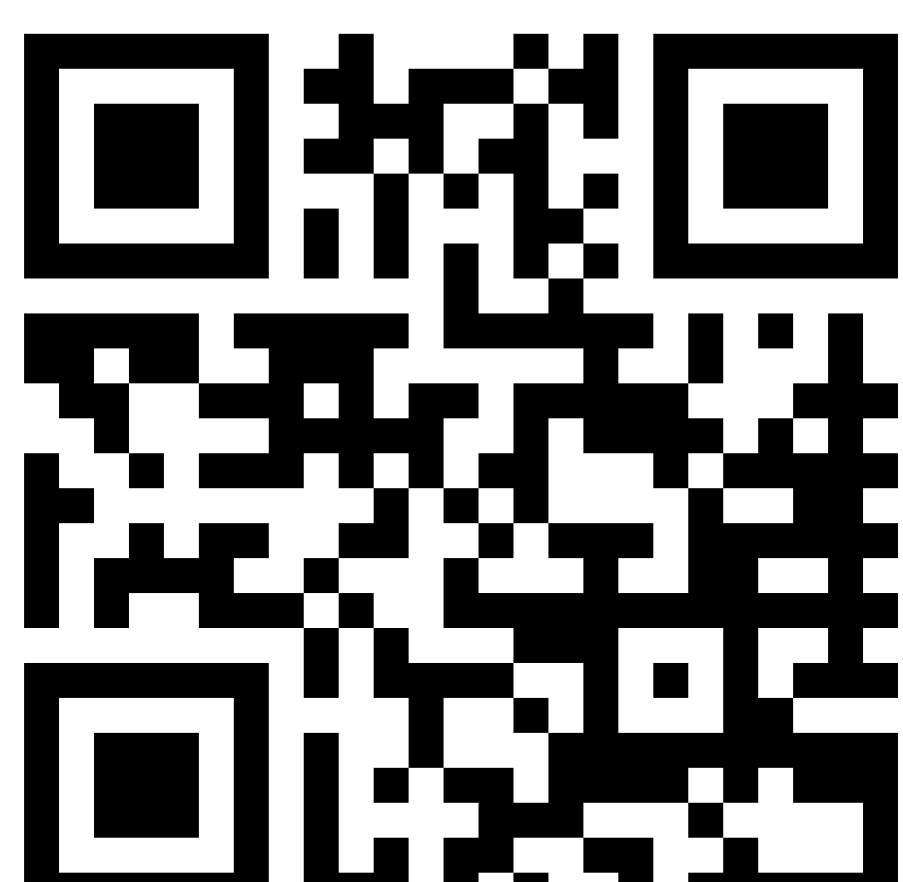
## Set up your own service



The GIN services are **Open Source** Software.

- You can set up your own In-House service
- Find the complete source code and documentation on github (see resources section)

## Resources and references



Find all gin projects at

<https://github.com/G-Node/gin-cli>  
<https://github.com/G-Node/gin-repo>  
<https://github.com/G-Node/gin-auth>  
<https://github.com/G-Node/gin-ui>

Find out about more g-node projects at

<https://g-node.github.io>

References

[1] <https://gin.g-node.org>  
[2] <https://git-scm.com>  
[3] <https://git-annex.branchable.com>  
[4] <https://www.doi.org>

Contact: [dev@gnode-org](mailto:dev@gnode-org)

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