

Installing LOFAR Imaging software

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- 1 Different ways to build and install
 - ▶ Build from source
 - ▶ Use Kern suite
 - ▶ Use docker images from Radio Observatory

Software dependencies

- Contains two key components:
 - ▶ Scripts to inspect LOFAR data
 - ▶ NDPPP (preprocessing and calibration)
 - ▶ LOFAR beam library

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- A large number of dependencies
 - ▶ Casacore & Measures data
 - ▶ Casarest
 - ▶ Python casacore
 - ▶ LSMTTool & RMExtract
 - ▶ Boost, lapack, Cfitsio, FFTW, HDF5, ...

Building the software from source

- https://www.astron.nl/lofarwiki/doku.php?id=public:user_software:start
- Not too hard but cumbersome
- Can be tricky if you do not have sudo access

Using Kern suite

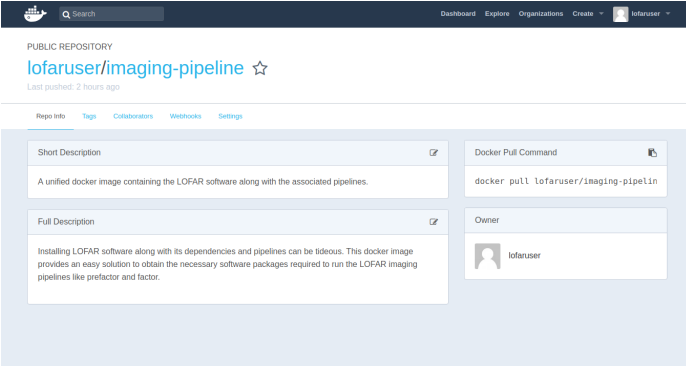
- Large repository of radio astronomy tools
- Debian based
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Using Kern suite

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- Install LOFAR software in 5 easy commands:
 - ▶ `sudo apt-get install software-properties-common`
 - ▶ `sudo add-apt-repository -s ppa:kernsuite/kern-4`
 - ▶ `sudo apt-add-repository multiverse`
 - ▶ `sudo apt-get update`
 - ▶ `sudo apt-get install lofar losoto lsmtool rmextract dysco factor python-gsm`

Using docker

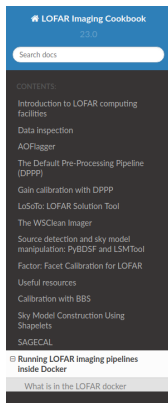
- Provides operating-system-level virtualization through containers
- Easy to build and distribute software
- Radio Observatory provides a docker container with all the dependencies.
- <https://hub.docker.com/r/lofaruser/imaging-pipeline/>



The screenshot shows the Docker Hub interface for the repository `lofaruser/imaging-pipeline`. The page is titled "PUBLIC REPOSITORY" and includes a search bar and navigation links like "Dashboard", "Explore", "Organizations", and "Create". The repository name is displayed in blue with a star icon, and it notes "Last pushed: 2 hours ago". Below the repository name are tabs for "Repo info", "Tags", "Collaborators", "Webhooks", and "Settings". The main content area is divided into two columns. The left column contains a "Short Description" field with the text "A unified docker image containing the LOFAR software along with the associated pipelines." and a "Full Description" field with the text "Installing LOFAR software along with its dependencies and pipelines can be tedious. This docker image provides an easy solution to obtain the necessary software packages required to run the LOFAR imaging pipelines like prefactor and factor." The right column contains a "Docker Pull Command" field with the command `docker pull lofaruser/imaging-pipeline` and an "Owner" section showing the profile picture and name of the user `lofaruser`.

Using docker

- Documented on the LOFAR Imaging Cookbook
- <https://support.astron.nl/LOFARImagingCookbook/index.html>



LOFAR Imaging Cookbook
23.0

Search docs

CONTENTS:

- Introduction to LOFAR computing facilities
- Data inspection
- AOFlogger
- The Default Pre-Processing Pipeline (DPPP)
- Gain calibration with DPPP
- LoSoTo: LOFAR Solution Tool
- The WSClean Imager
- Source detection and sky model manipulation: PyBDSF and LSMTTool
- Factor: Facet Calibration for LOFAR
- Useful resources
- Calibration with BBS
- Sky Model Construction Using Shapelets
- SAGECAL
- Running LOFAR Imaging pipelines inside Docker**
- What is in the LOFAR docker

Docs » Running LOFAR imaging pipelines inside Docker

[View page source](#)

Running LOFAR imaging pipelines inside Docker ^[1]

The now standard LOFAR imaging pipelines (like prefactor and factor) depend on a variety of software packages and this can be hard for some users to install all the necessary software packages, and their dependencies on their machines. In this chapter, we present an overview of a docker image that comes pre-packaged with all the tools that a user would need to run the LOFAR pipelines. For other methods to install LOFAR software, see the [LOFAR User Software](#) section on the LOFAR wiki.

With this new docker framework ^[2], initializing your LOFAR processing framework can be as simple as

```
$ docker run --rm -it lofaruser/imaging-pipeline:latest  
> NDPPP parsetfile
```

and frees the user (and sysadmins) from building all the required software packages. The following sections provide an overview of how to install and run LOFAR imaging pipelines using the docker.

Any questions concerning the docker image should be addressed to [science operations and support](#). Note however that this docker framework is experimental and support for it from the SOS group will be provided on a best effort basis.

What is in the LOFAR docker image?

Need help installing LOFAR software?

- If you have trouble installing the LOFAR software
 - ▶ Come talk to us during the school
 - ▶ Or contact SOS through RO Helpdesk.