LOFAR Docker Images

We offer the LOFAR software as Docker images, allowing anyone to run our software using the same configuration, without having to build it. Our images can be browsed at https://hub.docker.com/r/lofar/.

LOFAR Interferometry Post-Processing Software

To run the lofar pipeline software, you need to:

1. Install and configure Docker on your computer (Mac/Linux/Windows)
2. Download and start the LOFAR image by running:

   ```
   docker run -it --rm -u $UID -e USER -e HOME -v $HOME:$HOME lofar/lofar-pipeline:LOFAR-Release-2_19
   ```

   To list all available versions, go to https://hub.docker.com/r/lofar/lofar-pipeline/tags/.

3. You now have the LOFAR software available at your finger tips, and your home directory available. You can run for example:

   ```
   you@3617438dfc63:/$ NDPPP
   Usage: DPPP [-v] [parsetfile] [parsetkeys...]
     parsetfile: a file containing one parset key=value pair per line
     parsetkeys: any number of parset key=value pairs, e.g. msin=my.MS
   ```

   or:

   ```
   you@3617438dfc63:/$ long_baseline_pipeline.py
   /opt/lofar/lib/python2.7/site-packages/lofarpipe/support/utilities.pyc
   : Using default subprocess module!
   Usage: /opt/lofar/bin/long_baseline_pipeline.py <parset-file>
   [options]
   Results:
   ```

   or one of our dependencies:

   ```
   you@3617438dfc63:/$ /opt/aoflagger/bin/aoflagger
   AOFlagger 2.8.0 (2016-06-21) command line application
   This program will execute an RFI strategy as can be created with the
   RFI gui
   and executes it on one or several observations.

   Author: André Offringa (offringa@gmail.com)
   ```

```
Usage: ./aoflagger [options] <obs1> [<obs2> [..]]
...
```

Once you have the above up and running, you will need some data to work on, and likely a parset with configuration settings. If you've put both in your home directory, they're immediately available when running the above command. If not, you can use additional ''-v'' parameters to make more directories available in your Docker container.

LOFAR Pulsar Post-Processing Software

To run the lofar pipeline software, you need to:

1. Install and configure Docker on your computer (Mac/Linux/Windows)
2. Download and start the LOFAR image by running:

   ```
   docker run -it --rm -u $UID -e USER -e HOME -v $HOME:$HOME lofar/lofar-pulp:LOFAR-Release-2_19
   ```

   To list all available versions, go to https://hub.docker.com/r/lofar/lofar-pulp/tags/.

3. You now have the LOFAR pulp software available at your finger tips, and your home directory available. You can run for example:

   ```
   you@3617438dfc63:/$ pulp.py
   Usage: pulp.py <--id ObsID> [-h|--help] [OPTIONS]
   ```

Once you have the above up and running, you will need some data to work on. If you've put them in your home directory, they're immediately available when running the above command. If not, you can use additional ''-v'' parameters to make more directories available in your Docker container.

Q&A

Q: Where can I find a list of available LOFAR software versions?

A: For `lofar-pipeline`, surf to https://hub.docker.com/r/lofar/lofar-pipeline/tags/. For `lofar-pulp`, surf to https://hub.docker.com/r/lofar/lofar-pulp/tags/.

Q: What is included in the image?

We put the following in our `lofar-pipeline` image:

- LOFAR Pipeline Framework & Recipes
- NDPPP

- AWImager
- AOFlagger
- DAL2
- Casacore + casarest + python-casacore

Q: I get "Illegal instruction" when running some of the software?

A: The LOFAR software is compiled for a 2015-era processor (Intel Xeon E5-2603v3 to be exact) for performance reasons, and uses CPU instructions not available on older machines. Please run our images on a newer machine.