

# Installing the new LOFAR Software on a fresh Ubuntu 14.04

This are my private, unedited notes on installing the LOFAR Software on a fresh Ubuntu 14.04. They are an update on the notes for [Ubuntu 12.04](#) including the changes needed for building the new awimager2. (23.9.2015 Andreas Horneffer)

```
##### packets to install with apt-get, aptitude or whatever
libgtkmm-3.0-dev python-matplotlib python-pyfits libatlas-base-dev
mpi-default-bin mpi-default-dev libfreetype6-dev python-setuptools
libxml2-dev libpng12-dev libcfitsio3 libcfitsio3-dev libboost-all-dev
autoconf autoconf-archive autogen automake binutils-dev cmake cmake-curses-
gui
cvs doxygen flex gfortran git guile-1.8-dev ipython libblas-dev libblitz0-
dev
libboost-all-dev libboost-dev libfftw3-dev libfftw3-doc libgfortran3
libglib2.0-dev libgsl0-dev liblapack-dev liblog4cxx10 liblog4cxx10-dev
libopenmpi-dev libpqxx3-dev libx11-dev mgdiff patch pgplot5
python-dev python-numpy python-scipy scons subversion-tools
swig bison libbison-dev tcl tcl-dev tk tk-dev tk8.5-dev tcl8.5-dev
libhdf5-dev liblog4cplus-dev liblog4cplus-1.0-4 cython
####for parmedbplot:
python-sip python-qt4
#####for losoto:
python-tables
#####for casasynthesis:
libdbus-c++-dev libdbus-1-dev
#####for factor and its dependencies
python-astropy python-jinja2 python-shapely python-pp python-progressbar
```

Download packages:

```
#####
mkdir /opt/soft/lofar-stuff/Downloads
cd /opt/soft/lofar-stuff/Downloads
wget ftp://ftp.astron.nl/outgoing/Measures/WSRT_Measures.ztar
wget ftp://ftp.atnf.csiro.au/pub/software/wcslib/wcslib-4.25.1.tar.bz2
wget
http://downloads.sourceforge.net/project/aoflagger/aoflagger-2.7.0/aoflagger-
2.7.1.tar.bz2
wget https://pypi.python.org/packages/source/A/APLpy/APLpy-1.0.tar.gz
Build wcslib (with pgsbox!)
#####
tar -xjf ../Downloads/wcslib-4.25.tar.bz2
cd wcslib-4.25
export FFLAGS=-fPIC
./configure --prefix=/opt/soft/lofar-stuff
#no parallel make!
make
```

```
make install
```

Install Casacore data:

```
#####
```

(The WSRT measures don't include the data sub-directory)

```
mkdir -p /opt/soft/lofar-stuff/data
cd /opt/soft/lofar-stuff/data
tar -xzvf ../Downloads/WSRT_Measures.ztar
```

Download and Build Casacore2:

```
#####
```

```
mkdir -p BuildDir/casacore2
cd BuildDir/casacore2
svn co https://github.com/casacore/casacore/tags/v2.0.3 source
mkdir -p build/opt
cd build/opt
cmake -DBUILD_TESTING=NO -DCMAKE_INSTALL_PREFIX=/opt/soft/lofar-stuff -
DUSE_FFTW3=Yes -DUSE_THREADS=YES -DWCSLIB_ROOT_DIR=/opt/soft/lofar-stuff -
DBUILD_PYTHON=True -DDATA_DIR=/opt/soft/lofar-stuff/data ../../source
make -j12
make install
```

Download and Build python-casacore

```
#####
```

```
mkdir /opt/soft/lofar-stuff/BuildDir/python-casacore
cd /opt/soft/lofar-stuff/BuildDir/python-casacore
svn co https://github.com/casacore/python-casacore/trunk source
export PATH=$PATH:/opt/soft/lofar-stuff/bin
export LD_LIBRARY_PATH=/opt/soft/lofar-stuff/lib
export PYTHONPATH=/opt/soft/lofar-stuff/lib/python2.7/site-packages/
ln -s /opt/soft/lofar-stuff/lib /opt/soft/lofar-stuff/lib64
mkdir -p /opt/soft/lofar-stuff/lib/python2.7/site-packages/
cd source/
./setup.py build_ext -I/opt/soft/lofar-stuff/include -L/opt/soft/lofar-
stuff/lib
./setup.py install --prefix=/opt/soft/lofar-stuff
```

Download and Build casarest

```
#####
```

```
# casarest is needed for awimager (without the "2")
mkdir /opt/soft/lofar-stuff/BuildDir/casarest
cd /opt/soft/lofar-stuff/BuildDir/casarest
#svn co svn://lofar9.astron.nl/var/svn/repos/trunk/casarest source
svn co https://github.com/pkgw/casarest/trunk source
mkdir build
cd build
cmake -DCASACORE_ROOT_DIR=/opt/soft/lofar-stuff -DBUILD_ALL=1 -
DCMAKE_INSTALL_PREFIX:PATH=/opt/soft/lofar-stuff ../source
make -j12
make install
```

## Download and Build casasynthesis

#####

```
# casasynthesis is needed for awimager2 (with the "2")
mkdir /opt/soft/lofar-stuff/BuildDir/casasynthesis
cd /opt/soft/lofar-stuff/BuildDir/casasynthesis
svn co https://github.com/radio-astro/casasynthesis/trunk source
mkdir build
cd build
cmake -DCASACORE_ROOT_DIR=/opt/soft/lofar-stuff -
DWCSLIB_ROOT_DIR=/opt/soft/lofar-stuff -
DCMAKE_INSTALL_PREFIX:PATH=/opt/soft/lofar-stuff ../source
make -j12
make install
```

## Build AOFlagger (needed for LOFAR >= version 2.15)

#####

```
# it can be built without gtkmm (or older versions of gtkmm) if one doesn't
need rfigui etc.
# (the LOFAR software will build fine without the gui)
mkdir /opt/soft/lofar-stuff/BuildDir/AOFlagger
cd /opt/soft/lofar-stuff/BuildDir/AOFlagger
tar -xjf ../../Downloads/aoflagger-2.7.1.tar.bz2
mkdir build
cd build
cmake -DCASACORE_ROOT_DIR=/opt/soft/lofar-stuff -DBUILD_SHARED_LIBS=ON -
DCMAKE_INSTALL_PREFIX:PATH=/opt/soft/lofar-stuff ../aoflagger-2.7.1
make -j12
make install
```

## Download and Build the LOFAR Software

#####

```
mkdir /opt/soft/lofar-stuff/BuildDir/lofarsoft
cd /opt/soft/lofar-stuff/BuildDir/lofarsoft
svn checkout --ignore-externals https://svn.astron.nl/LOFAR/trunk LOFAR
#if it asks for an account: username: lofar-guest password: lofar-guest
mkdir -p build/gnu_opt
cd build/gnu_opt
cmake -DCASACORE_ROOT_DIR=/opt/soft/lofar-stuff -
DWCSLIB_ROOT_DIR=/opt/soft/lofar-stuff -DBUILD_TESTING=NO -
DBUILD_SHARED_LIBS=ON -DUSE_OPENMP=ON -DBUILD_PACKAGES="Offline" -
DCMAKE_INSTALL_PREFIX:PATH=/opt/soft/lofar-stuff ../../LOFAR/
make -j12
make install
```

## Download and Build LoSoTo

#####

```
mkdir /opt/soft/lofar-stuff/BuildDir/losoto
cd /opt/soft/lofar-stuff/BuildDir/losoto
git clone https://github.com/revoltek/losoto.git source
cd source
export PYTHONPATH=/opt/soft/lofar-stuff/lib/python2.7/site-packages/
```

```
python ./setup.py install --prefix=/opt/soft/lofar-stuff
```

#### Download and Build WSClean

```
#####
```

```
cd /opt/soft/lofar-stuff/Download
wget
https://downloads.sourceforge.net/project/wsclean/wsclean-1.9/wsclean-1.9.tar.bz2
cd /opt/soft/lofar-stuff/BuildDir
tar -xjf ../Download/wsclean-1.9.tar.bz2
# fix wsclean-1.9/lofar/lbeamevaluator.h
# add "#define HAVE_BOOST" before including "StationResponse/Station.h"
mkdir wsclean-1.9/build
cd wsclean-1.9/build
cmake -DCMAKE_PREFIX_PATH=/opt/soft/lofar-stuff -
DCMAKE_INSTALL_PREFIX:PATH=/opt/soft/lofar-stuff -
DCASA_INCLUDE_DIR=/opt/soft/lofar-stuff/include/casacore ../
make -j12
make install
```

#### Download and Build LSMTool

```
#####
```

```
mkdir /opt/soft/lofar-stuff/BuildDir/lsmtool
cd /opt/soft/lofar-stuff/BuildDir/lsmtool
git clone https://github.com/darafferty/LSMTool.git source
cd source
export PYTHONPATH=/opt/soft/lofar-stuff/lib/python2.7/site-packages/
python ./setup.py install --prefix=/opt/soft/lofar-stuff
```

#### Download and Build RMextract

```
#####
```

```
mkdir /opt/soft/lofar-stuff/BuildDir/RMextract
cd /opt/soft/lofar-stuff/BuildDir/RMextract
git clone https://github.com/maaijke/RMextract.git source
cd source
export PYTHONPATH=/opt/soft/lofar-stuff/lib/python2.7/site-packages/
python ./setup.py build --add-lofar-utils
python ./setup.py install --add-lofar-utils --prefix=/opt/soft/lofar-stuff
```

#### Download and Build APLpy

```
#####
```

```
cd /opt/soft/lofar-stuff/BuildDir/APLpy
tar -xvzf ../../Downloads/APLpy-1.0.tar.gz
cd APLpy-1.0
export PYTHONPATH=/opt/soft/lofar-stuff/lib/python2.7/site-packages/
python ./setup.py install --prefix=/opt/soft/lofar-stuff
```

#### Download factor

```
#####
```

```
mkdir /opt/soft/lofar-stuff/BuildDir/factor
```

```
cd /opt/soft/lofar-stuff/BuildDir/factor
git clone https://github.com/revoltek/factor source
```

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<https://www.astron.nl/lofarwiki/> - **LOFAR Wiki**

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