Available packages on the LOFAR offline clusternodes

This page gives an overview of available packages, other than the 'standard' ones distributed as part of the Linux distribution, and how to initialize these. See the Login environment page for instructions on activating packages at login time.

Packages

Package	Description	Initialize	Update frequency	Comments
Casa	Browser, viewer	`use Casa`	infrequent	NRAO development
GDL	Gnu data language	`use GDL`	infrequent	Contains GDL, GSL, PLPlot
grid				
hdf5	library	–	infrequent	Used by other packs, now 1.8.2
hdf5viewer		–	infrequent	
LofIm	Lofar Imaging	`use LofIm`	daily	Follow this link
pipeline				
Pythonlibs	Several useful Python modules	`use Pythonlibs`	infrequent	Follow this link
LUS (Lofar User Software)	USG DAL and Pulsar tools	`use LUS`	daily	Provided by USG
wcslib	library	–	infrequent	Used by other packs, now 4.3

Descriptions of Packages

Casa

This is the NRAO developed package that provides Graphical interfaces like those available in the old AIPS++ packages. It provides the following useful tools (see directory `/opt/Casa/bin`):

- `casabrowser` → A table browser (much like the old glish-based browser)
- `casaplotms` → A tool to make 2-D plots of data in a MS
- `casaviewer` → Visualizer
- `casapy` → Casa's Python interface.

Extensive documentation can be found on this NRAO-hosted webpage.

- The release and helpdesk can be obtained from http://my.nrao.edu. Versions are available for Linux and Mac OSX 10.5 and 10.6.
- Details about the release including new capabilities, release notes, and the full user reference and cookbook can be found at the CASA home page: http://casa.nrao.edu
- We are also pleased to announce the creation of a new CASA wiki with fully annotated tutorials and tips: http://casaguides.nrao.edu. More guides covering a wider range of data possibilities will be added over time.

The current version (as of Jnue 23rd 2010) is Casa 3.0.2 .

Casa uses the IERS measures tables that are provided by the distribution; this is linked in with the code. If you want to use custom IERS tables, you'll have to make a `$HOME/.casarc` file that contains the direectory where your version of the tables are. For instance:

```
measures.directory: /opt/casacore/data
```

LofIm

The package LofIm (Lofar Imaging) consists of the following previously known subpackages:

- casacore
- casarest
- pyrap
- LOFAR
- ASKAPsoft

All these are build every night in a single go, with source code extracted from each package's source repository. Activating the LofIm package ensures that you will have a consistent set of libraries and executables.

To activate it on commandline use:

```
> use LofIm
```

This will activate the version that was build last night. It will add all settings needed to use the subpackages to your PATH, PYTHONPATH and LD_LIBRARY_PATH environment variables.

As all of the individual subpackages are in a development phase, we **cannot** guarantee that each nightly build is bugfree, or even that is has succeeded. Therefore, we keep a 'buffer' of previous builds for a week. This ensures that if a nightly build has failed, you can use a (working) previous build. To activate a previous build on commandline use:

```
> use LofIm <day> (e.g., use LofIm Wed)
```

If the problem that caused a build to fail has not been solved in a week's time, you will not be able to use the package until it has been fixed. In due time we will implement a system with a release policy, that will enable you to use 'stable' versions of these libraries.

LofIm uses the IERS measures tables that are in `/opt/casacore/data`; this is linked in with the code. If you want to use custom IERS tables, you'll have to make a `$HOME/.casarc` file that contains

the direectory where your version of the tables are. For instance:

```
measures.directory: /users/foobar/IERS
```

GDL

The GDL package contains the following subpackages:

1. gdl (Gnu data language)
2. gsl (GNU Scientific Library)
3. plplot

These work together and form a useful packages used by the Pulsar group.

Pythonlibs

We have made available several useful Python modules. These can be activated with a single command:

```
> use Pythonlibs
```

(see this page for information on how to activate at login time). The Pythonlibs currently contain:

- Numpy → version 1.3.0
- SciPy → version 0.7.1
- matplotlib → version 0.99.1.1
- PyFits → version 2.2.2
- PyEphem → version 3.7.3.4
- PyFFTW → version 0.2
- PyTables → version 2.1.2
- H5Py → Version 1.2.1
- Aipy → Version 0.9.1

LUS

The LUS stands for Lofar User Software. It is a part of the User Software Groups (USG) software package. The main packages that are build are the DAL (Data Access Layer) and the Pulsar package (TEMPO, PResto, etc.). Information about these packages can be obtained by Lars Baehren (DAL, build system) or Anastasia Alexov (Pulsar software).

The LUS is build on a daily basis on lfe001 and available on all cluster nodes. To activate it type:

```
> use LUS
```

It will add items to the PATH, LD_LIBRARY_PATH, PYTHONPATH variables, and add LOFARSOFT, PRESTO and TEMPO env. vars. to your login session.

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