User Software :: Data Access Library (DAL)

DAL v2

The new DAL (DAL v2) is available from the same github location as the original DAL: https://github.com/nextgen-astrodata/DAL It is also used by the LOFAR RTCP beamformer and TBB data writers. For more information, see the README and INSTALL.

The information below refers to the DAL (v1). Its repository has been moved into https://github.com/nextgen-astrodata/DAL1 but it is no longer maintained. The LUS still contains DAL v1.

Getting the source code (DAL v1)

As of Feb 15, 2011 there are two ways in which to retrieve, build and install the DAL:

1. From the original source repository on Github.
   In order to build the **DAL** as a stand-alone library, clone directly from the repository on Github:

   ```
   git clone https://github.com/nextgen-astrodata/DAL.git DAL
   ```

   Once your checkout from the Git repository is complete, follow the instructions as described in the section "Configuration and build" below.

2. As part of the LOFAR User Software (LUS).
   If you want (or need) to use the DAL as part of the LUS software collection, check out a working copy of the code base from the LUS Subversion repository

   ```
   svn co http://usg.lofar.org/svn/code/trunk lofarsoft
   ```

   Once the checkout is complete (assuming bash as shell):

   ```
   cd lofarsoft
   export LOFARSOFT=`pwd`
   . ./devel_common/scripts/init.sh
   cd build
   ./bootstrap
   make dal
   ```

   By default build of the DAL will be carried out from a source tar-archive which comes as part of the software collection.

Configuration, build and installation (DAL v1)

The DAL uses the CMake (www.cmake.org) Cross-Platform Makefile Generator for configuration and control of the build.

Once your checkout from the Git repository is complete you will have a directory structure on disk as described in section "Organization of the source code" above.

```
cd DAL
mkdir build
cd build
cmake ..
make
```

The default installation location is "/opt/dal"; if you want to change this, you can tell CMake so by using

```
cmake -D DAL_INSTALL_PREFIX=<installation prefix> ..
```

The CMake scripts will check a number of standard locations for the required 3-party packages (such as Boost, HDF5, etc.), but if you are using a custom version installed at a non-standard location, you might need to aid CMake in finding all required components:

```
cmake -DHDF5_ROOT_DIR=<basedir of HDF5 install> ..
```

In to install the DAL you will have to run

```
make install
```

from within the build directory. Depending on whether you are installing into a local directory or into a system-directory, appropriate permissions might be required.

In order to maintain compatibility with the Filesystem Hierarchy Standard (FHS) the following default installation layout has been defined:

```
/opt
└── dal                          CMAKE_INSTALL_PREFIX   =
DAL_INSTALL_PREFIX
    ├── bin                      DAL_INSTALL_BINDIR     =
DAL_INSTALL_PREFIX/bin
    ├── include                  DAL_INSTALL_INCLUDEDIR =
DAL_INSTALL_PREFIX/include
    │   ├── coordinates
    │   ├── core
    │   ├── data_common
    │   └── data_hl
    ├── lib                      DAL_INSTALL_LIBDIR     =
DAL_INSTALL_PREFIX/lib
    └── share
```

```
        └── doc
            └── html
```

However the installation configuration can be tailored depending on your personal needs:

1. *Default settings.*
   If no further command line parameter are provided, the installation will be done according to the above described structure.
2. *Custom installation prefix.*
   In order to install into an existing standard directory structure – such such as e.g. "/usr/local" – use

   ```
   -D DAL_INSTALL_PREFIX=<prefix>
   ```

3. *Installation as part of the LUS.*
   In order to simplify installation of the DAL as part of the LOFAR User Software distribution, a preset has been defined which can be used through

   ```
   -D LUS_INSTALL_PREFIX=$LOFARSOFT/release
   ```

For further details and additional configuration options, consult the Doxygen-based documentation.

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