Installation of Cadfaelbrew on MacOS 10.9.5

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This note reports how we have built and installed Cadfaelbrew on a MacOS 10.9.5 system for the EDELWEISS-DM experiment.

Links:

- https://github.com/SuperNEMO-DBD/brew.git

Preparation

1. Clone the Cadfaelbrew Git repository from GitHub:

    a. Prepare a working directory:

    ```
    $ mkdir -p ${HOME}/softs/EDELWEISS
    $ cd ${HOME}/softs/EDELWEISS
    ```

    b. Download the CadfaelBrew sources:

    ```
    $ git clone https://github.com/SuperNEMO-DBD/brew.git CadfaelBrew
    ```

    c. Activate the Cadfael `brew` command:

    ```
    $ export PATH="${HOME}/softs/EDELWEISS/CadfaelBrew/bin:${PATH}"
    ```

2. Configuration of the LPC Caen proxy for curl (specific to LPC Caen):

    This is a special setup to process the installation from behind a network proxy:

    ```
    $ export http_proxy=http://caeproxy.in2p3.fr:3128/
    $ export https_proxy=https://caeproxy.in2p3.fr:p3128/
    ..
    ```

3. Installation of XQuartz 2.7.11:

    ```
    $ brew cask reinstall xquartz
    Password: ***
    ...
    ```

4. Booststrap Cadfaelbrew:

    ```
    $ brew update
    $ brew cadfael-bootstrap
    ...
    ```

Installation

1. Install core packages:

```
$ brew install supernemo-dbd/cadfael/boost
$ brew install supernemo-dbd/cadfael/camp
$ brew install supernemo-dbd/cadfael/clhep
$ brew install supernemo-dbd/cadfael/xerces-c
```

2. Geant4.9:

Cannot access the `http://geant4.cern.ch/support/source/geant4.9.6.p04.tar.gz` tarball. It seems the base URL has changed to:

`http://geant4.web.cern.ch/geant4/support/source/`

Workaround: edit the Geant4 formula :

`./Library/Taps/supernemo-dbd/homebrew-cadfael/Formula/geant4.rb.`

   a. change the URL to:

```
stable do
  url "http://geant4.web.cern.ch/geant4/support/source/geant4.9.6.p04.tar.gz"
```

   b. Inhibit automatic download/installation of Geant4 data files:

```
args << "-DGEANT4_INSTALL_DATA=OFF"
# args << "-DGEANT4_INSTALL_DATA_TIMEOUT=86400" if build.with? "notimeout"
```

   c. Installation:

```
$ brew install supernemo-dbd/cadfael/geant4
```

   d. Manual installation of Geant4 data files:

```
$ mkdir -p ${HOME}/softs/EDELWEISS/CadfaelBrew/Cellar/geant4/9.6.4_4/share/Geant4
$ cd  ${HOME}/softs/EDELWEISS/CadfaelBrew/Cellar/geant4/9.6.4_4/share/Geant4-9.6
$ wget http://geant4.web.cern.ch/geant4/support/source/G4NDL.4.2.tar.gz
$ wget http://geant4.web.cern.ch/geant4/support/source/G4EMLOW.6.32.tar.gz
$ wget http://geant4.web.cern.ch/geant4/support/source/G4PhotonEvaporation.2.3.ta
$ wget http://geant4.web.cern.ch/geant4/support/source/G4RadioactiveDecay.3.6.ta
$ wget http://geant4.web.cern.ch/geant4/support/source/G4NEUTRONXS.1.2.tar.gz
$ wget http://geant4.web.cern.ch/geant4/support/source/G4PII.1.3.tar.gz
$ wget http://geant4.web.cern.ch/geant4/support/source/RealSurface.1.0.tar.gz
$ wget http://geant4.web.cern.ch/geant4/support/source/G4SAIDDATA.1.1.tar.gz
$ tar xzf G4NDL.4.2.tar.gz
$ tar xzf G4NEUTRONXS.1.2.tar.gz
$ tar xzf G4PII.1.3.tar.gz
$ tar xzf G4PhotonEvaporation.2.3.tar.gz
$ tar xzf G4RadioactiveDecay.3.6.tar.gz
$ tar xzf G4SAIDDATA.1.1.tar.gz
$ tar xzf RealSurface.1.0.tar.gz
$ rm -f *.tar.gz      # <=== optional
```

3. Root5:

```
$ brew install xz
$ brew install pcre
$ brew install supernemo-dbd/cadfael/root5
```

4. Additional software:

```
$ brew install gnuplot --with-cairo --with-wxmac
```

Setup

In your `.bashrc`:

```
echo >&2 "[info] Type 'brewsh' to enter Cadfaelbrew shell..."
export CADFAELBREW_HOME_DIR="${HOME}/softs/EDELWEISS/CadfaelBrew"
function do_cadfaelbrew_shell()
{
  if [ -n "${CADFAELBREW_INSTALL_DIR}" ]; then
    echo >&2 "[warning] do_cadfaelbrew_shell: Cadfaelbrew is already setup !"
    return 1
  fi
  export CADFAELBREW_INSTALL_DIR="${HOME}/softs/EDELWEISS/CadfaelBrew"
  export PATH="${CADFAELBREW_INSTALL_DIR}/bin:${PATH}"
  export MANPATH="${CADFAELBREW_INSTALL_DIR}/share/man:${MANPATH}"
  export INFOPATH="${CADFAELBREW_INSTALL_DIR}/share/info:${INFOPATH}"
  echo >&2 "[info] do_cadfaelbrew_shell: Entering Cadfaelbrew shell... (type 'ex
  ${CADFAELBREW_INSTALL_DIR}/bin/brew sh
  unset CADFAELBREW_INSTALL_DIR
  echo >&2 "[info] do_cadfaelbrew_shell: Cadfaelbrew shell is terminated."
  return 0
}
export -f do_cadfaelbrew_shell
alias brewsh="do_cadfaelbrew_shell"
```