Steps to setup mpich, hdf5, & Chombo

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1) apt-get install X

X ≡ gfortran, gnuplot, doxygen, graphviz, libblas-dev, liblapack-dev, libgtk2.0-dev, tcl, tcl-dev, m4, csh, subversion.

2) source. autoconf, automake, libtool

- ./configure --prefix=/usr/local
- make
- sudo make install

3) mpich

- ./configure --prefix=/usr/local/PROG/mpich
- make
- sudo make install. Disregard the possible warnings about the libraries.

4) hdf5-serial

- ./configure --prefix=/usr/local/PROG/hdf5-serial --enable-fortran
- make
- make check
- sudo make install

5) hdf5-parallel

- CC=/usr/local/PROG/mpich/bin/mpicc ./configure --prefix=/usr/local/PROG/hdf5-parallel --enable-fortran --enable-parallel
- make
- make check
- sudo make install.

6) Add the bashrcadd content to the end of the ∼/.bashrc file.

7) Chombo

- register in Chombo Download Page to get USERNAME & PASSWORD
- svn --username USERNAME co https://anag-repo.lbl.gov/svn/Chombo/release/{ver} {Directory-PATH-to-Chombo}. See Download Instructions for more information.
  e.g., for Chombo version 3.2, USERNAME=rfjd, download directory /home/rfjd/Chombo:
  svn --username rfjd co https://anag-repo.lbl.gov/svn/Chombo/release/3.2 /home/rfjd/Chombo/
- copy the file Make.defs.local into {Directory-PATH-to-Chombo}/lib/mk

- cd {Directory-PATH-to-Chombo}/lib

- make lib

- make doxygen. Chombo documentation and info can be found in {Directory-PATH-to-Chombo}/lib/doc/doxygen/html/index.html using your web browser.

- To run the released examples, go to the corresponding directory, make all, mpiexec ./X.ex inputs. You will be able to open *.hdf5 files using visit if DIM = 2 or 3 in Make.defs.local.

8) visit

- download the visit install script (visit_installX_Y_Z, where X.Y.Z is the version) and platform from the official download page.

- chmod +x visit-installX_Y_Z

- ./visit-installX_Y_Z X.Y.Z platform /usr/local/visit

  e.g., for linux-x86_64-ubuntu20 (platform) and version 3.1.4:

  ./visit-install3_1_4 3.1.4 linux-x86_64-ubuntu20 /usr/local/visit

- choose some number in the pop-up!

- add alias visit='/usr/local/visit/bin/visit' to the .bashrc file.

- typing 'visit' in a terminal brings up the software! You can then load the hdf5 files to view the Chombo results.

The above procedure was checked with Ubuntu 20.04 LTS, autoconf-2.71, automake-1.16.5, libtool-2.4.7, visit3_1_4.linux-x86_64-ubuntu20, mpich-4.1.1, and hdf5-1.14.0.