Quick Start: Basic Seismic Utilities (BSU)
Compiling BSU

These instructions are for compiling BSU from the TAR archive. On Linux, untar the archive, **bsu-3.0.3.tar.gz**, under either **/usr/local** or **/usr/local/src**. On MAC OSX might be better in your home directory since Homebrew uses /usr/local. For dependencies, I prefer Fink (installs under /sw) and Macport (installs under /opt).

DEPENDENCIES:
The configure script will help point out missing dependencies on your system. You will need the following:

- BLAS (Basic linear algebra)
- LAPACK (more linear algebra)
- GSL (GNU Scientific Library)
- GFORTRAN
- GCC (Gnu Compiler)
- GNUPLOT (Plotting package, sometimes piped to)
- PLPLOT (Plotting package, can configure without, relying only on Gnuplot)
- libshp (needed by plplot)
- mseed libraries (debian packages libmseed2 and libmseed-dev)
- Development packages for blas, lapack, gsl, plplot. These end with names like -dev (Debian) or -devel (Redhat).
- Mac OSX install XQuartz

See the User Guide for more specifics by operating system.
TIP:Different operating systems put things in different places. Recommend installing the locate command, run sudo updatedb before proceeding with configuration. The configuration scripts can take advantage of this data base. For example, fortran90 *.mod files may not be located without this.

STEPS:

1. Change into the top level directory, bsu-3.0.3
2. Type the following commands:
   - configure <options as needed>
   - make >&make.out
   - make install >&install.out
   - (may need to do above as root, sudo make install)
   - sudo ldconfig

Examine the make.out and install.out files for a record of how it went.

CONFIGURE OPTIONS
These may change over time as upgrades occur in distributions.

- Debian 12
  - configure –with-plplotlib
  - configure

- Redhat Fedora-38
  - This works better than Enterprise versions of RedHat.
  - Source RPM has been built, and also binary RPMS on a Fedora-38.
  - Source Archives include:
    - Fedora 38 – x86_64
    - Fedora 38 openh264 (From Cisco) - x86_64
    - Fedora Modular 38 - x86_64

- Redhat Enterprise (see user guide notes, need to rebuild plplot)
  - You will need to compile/install cmake, plplot
  - [Note: cmake-2.8.12.2-2.el7.x86_64 is available with this OS,
  - so you can't use the most recent plplot 5.15.0 which requires
  - a more advanced version of cmake]
  - configure –with-plplotlib PKG_CONFIG_PATH=/usr/lib64/lib/pkgconfig

- Microsoft Windows (10)
  - MingwBSU-3.0.3.tgz
  - This is a cross-compile on a Linux system that has the Mingw32 tool chain installed. No configure command. Hardwired Makefiles.
  - Make
  - make install
  - Result of compile: BSU_EXEC-3.0.3.zip, install on Windows where *.exe will be in the path. Recommend installing Mingw on Windows also, run codes in power shell.

There are useful tips in the user guide. PLPLOT is worth the effort since PLPLOT graphics are faster than Gnuplot. There are also good tips on meeting dependencies on some of the linux distributions.

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