Dongwook Lee <dlee79@ucsc.edu>

Using lapack on Hummingbird: Numerical Linear Algebra

1 message

Numerical Linear Algebra <notifications@instructure.com> Thu, Mar 11, 2021 at 1:51 PM
Reply-To: reply+68b5fef5277f94b7-9270~78638619-1615499506@notifications.canvaslms.com
To: dlee79@ucsc.edu

Hi all,

If you would like to use one of the campus compute servers to avoid needing a valid local environment I can supply a little extra information. Specifically on Hummingbird, to link against Lapack you will need to do two things: load the Lapack module, and modify the compile command to tell gfortran where to find Lapack. I advise you grab the minimal example from here: https://people.ucsc.edu/~imay1/_static/AM129_F20/chapters/chapt02/ch02_fortran_blas_lapack.html#about-blas-and-lapack

After getting solve1.f90 into your home directory on Hummingbird you will need to run the following commands to compile the example:

- module load lapack/lapack-3.8.0
- gfortran -L /hb/software/apps/lapack/gnu-3.8.0/lib64/ -llapack -fdefault-real-8 solve1.f90

Note that an extra compile flag has been added to specify where the Lapack library actually is on the machine. For the purposes of your final project please note that this extra flag must be specified in your makefile. Please store it in some variable so that we can easily remove it when running your code for ourselves. Second, note that you will need to run the module load command at the start of each session on Hummingbird. This load is not persistent across sessions.

Finally, for running on other compute clusters (now or in your future) it will be helpful to know why things work this way. The module system exists to allow multiple versions of a variety of software to exist on the same machine without interference, which is very desirable when many different people need to use the same resource. Most clusters do solve this via modules, though the details can be different.

Cheers,

Ian

View announcement | Update your notification settings