

The objective of the present exercise is to learn to submit and run jobs in Frontera. The C code was written by Mobeen Ludin and is also part of Module 3.9. Follow the following instructions to complete the course:

1. Copy the tarball to your \$HOME in Stampede2 using scp, rsync, or globus-online.
2. Untar the tarball into your \$SCRATCH space. Create subdirectories accordingly.
3. Load the Intel MPI module: module load impi
4. Compile the source code, for this purpose a Makefile is provided. You can simply call 'make'.
5. A submission script is provided called runbatch. It is currently set to a fixed number of nodes and threads per node. The CPU affinity is controlled by OpenMP and is set to the default values.
6. The student is encouraged to try different CPU affinity parameters as environment variables in the submission script. Editing of the submission file can be performed directly in the login node using vim or emacs.
7. Based on the different CPU-binding affinity parameters how can you achieve the best performance for a multi-node and multi-core job submission.