Sudo apt update

Sudo apt upgrade

Sudo apt-get install gcc

For linux: png.h:

sudo apt-get install libpng-dev

gcc-8 -c dem\_mpi\_gpu.c -o dem\_mpi\_gpu.o -fopenmp -O3 -I/usr/local/include -L/usr/local/lib -L$HOME/mpich/mpich2/lib -lmpi -lz -w -lpng -lm

nvcc -ccbin=mpic++ dem\_cuda.cu dem\_mpi\_gpu.o -lpng -arch=sm\_50 -Xptxas -O3

gcc-8 -c dem\_openmp\_gpu.c -o dem\_openmp\_gpu.o -fopenmp -O3 -I/usr/local/include -L/usr/local/lib -L$HOME/mpich/mpich2/lib -lmpi -lz -w -lpng -lm

nvcc -ccbin=mpic++ dem\_cuda.cu dem\_openmp\_gpu.o -lpng -arch=sm\_50 -Xptxas -O3 -Xcompiler -openmp -o exe\_omp\_gpu.x