

Parallel Programming Project

Master HPC-AI

2019-2020

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Due to December 20th 2019

Project objectifs :

- MPI Parallelisation of the dense matrix-vector product implemented in TP2/densemv_mpi.cpp
- MPI Parallelisation of the sparse matrix-vector product implemented in TP2/spmv_mpi.cpp
- Realize a benchmark with the matrix sizes $n_x = 50, 100, 150$ and 200 for a number of cores $n_p = 1, 2, 4, 8, 12, 16$ and 24 . The benchmark should be realized with the submission scripts run. The enclosed script should be modified with the project path, and executable names. The loop on the matrix sizes n_x and the number of cores n_p are already written in the script.
- The performance results of the tests should be gathered in a 2 pages benchmark report including executing time tables, performance and speed up curves, and the description of the tests.

Send me by mail before December 20th 2019 :

- the benchmark report,
- the files :
 - denssemv_mpi.cpp,
 - sparsemv_mpi.cpp,
 - DenseMatrix.h
 - andSparseMatrix.h.
- the path on the cluster of your project.

If you have any problem or questions, send me a mail explaining your problem and attaching the log files with your problems.