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Introduction in High Performance Computing
Sheet 5

One sided communication Write a transposition of a distributed matrix with help of one sided communication.

Start with 4 MPI Tasks and a small matrix of size 16x16 that is 8x8 matrices for each task and each task initializes its own data. Preset the individual matrices meaningful to control your result.

If correct for a small case, extend your program to 16 MPI tasks and a 1,024x1,024 sized matrix.

Performance Monitoring Your next task is the performance monitoring of your distributed matrix transposition with help of vampirtrace.

Vampir visualization may be done on the head nodes. To collect data to be visualized you may use vampirtrace (module add vampirtrace) to instrument your code via:

`vtcc -vt:cc mpicc file.c -o executable`

Run now the instrumented code in `executable` on nodes of the same type and compare the results.

If you use the MPI-Distribution OpenMPI you may use mpicc-vt to compile your files.