

Programming OpenMP

Using OpenMP Compilers & Exercises

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Production Compilers w/ OpenMP Support



- GCC
- clang/LLVM
- Intel Classic and Next-gen Compilers
- AOCC, AOMP, ROCmCC
- IBM XL
- ... and many more

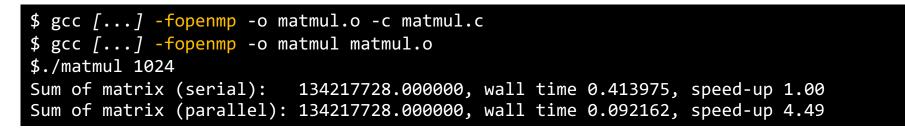
See https://www.openmp.org/resources/openmp-compilers-tools/ for a list

Compiling OpenMP



- Enable OpenMP via the compiler's command-line switches
 - → GCC: -fopenmp
 - → clang: -fopenmp
 - → Intel: -fopenmp or -qopenmp (classic) or -fiopenmp (next-gen)
 - \rightarrow AOCC, AOCL, ROCmCC: -fopenmp
 - → IBM XL: -qsmp=omp

Switches have to be passed to both compiler and linker:



Exercises: Overview



Exercise no.	Exercise name	OpenMP Topic	Day / Order (proposal)
1	Hello World	Getting started	Start with this (if OpenMP is new for you)
2	Pi	Worksharing, Scoping	First day
3	Jacobi	Worksharing, Scoping, NUMA	First day
4	Fibonacci	Tasking	Second day
5	Work-Distribution	Worksharing	First day, review on Second day
6	Min/Max	Worksharing, Reduction	First day
7	QuickSort	Tasking	Second day
8	Primes	Correctness w/ Tool	Only if you are interested in this topic
9	Mandelbrot	Correctness by Hand	Only if you are interested in this topic