

Programming OpenMP

Using OpenMP Compilers

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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
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- 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)
 - AOCC, AOCL, ROCmCC: `-fopenmp`
 - IBM XL: `-qsmp=omp`
- Switches have to be passed to both compiler and linker:

```
$ gcc [...] -fopenmp -o matmul.o -c matmul.c
$ gcc [...] -fopenmp -o matmul matmul.o
$ ./matmul 1024
Sum of matrix (serial): 134217728.000000, wall time 0.413975, speed-up 1.00
Sum of matrix (parallel): 134217728.000000, wall time 0.092162, speed-up 4.49
```