

## Jacobi Problem Open MP

**Solution Overview**

The Jacobi Simulation Problem can be parallelized with Open MP by using reduction command and for loop collapse command. This ensures correctness instead of using locks. The rest of the implementation is like the pthreads implementation. The only real difference is the reliance on implicit barriers instead of direct barrier synchronization calls.

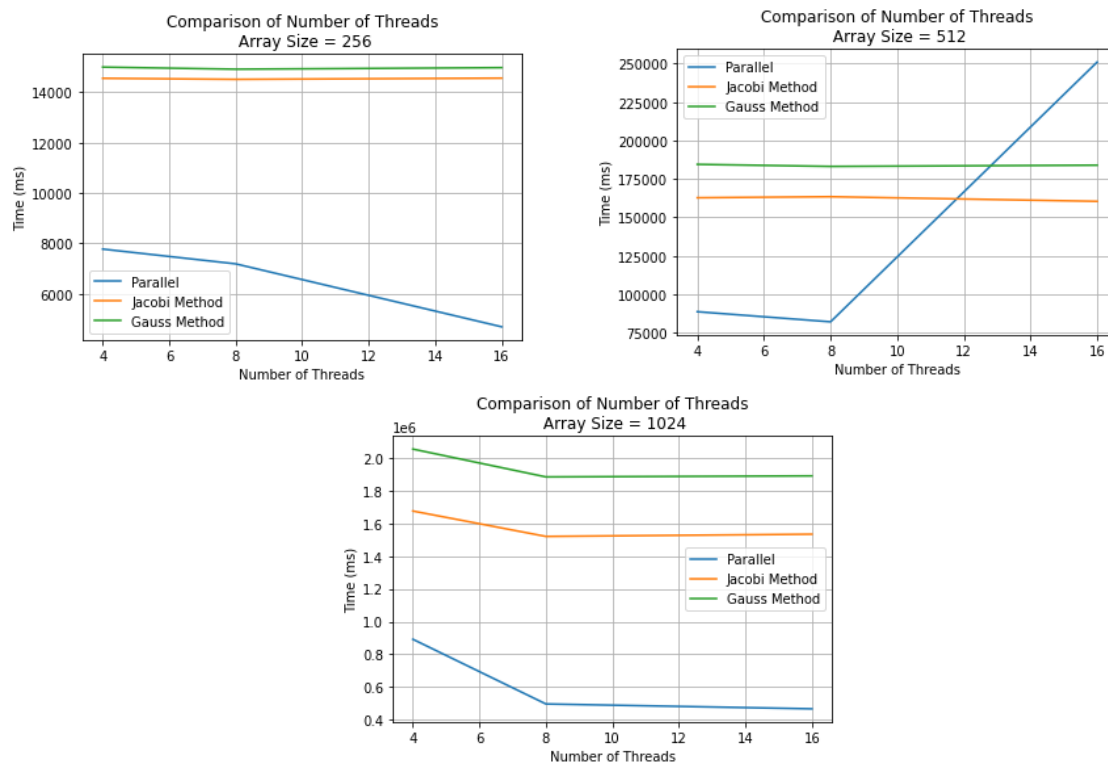
**Performance Results**

Figure 1: Performance comparison of Open MP implementation with different array sizes and number of threads.

**Reflection**

Across most trials the parallel implementation outperformed the serial version. The spike during the array of 512 was most likely due to overhead pressure from competing recourse on xunil as that trend was not consistent across the other trial. Open MP was significantly easier to implement than pthreads.