CSE6230 Final Project

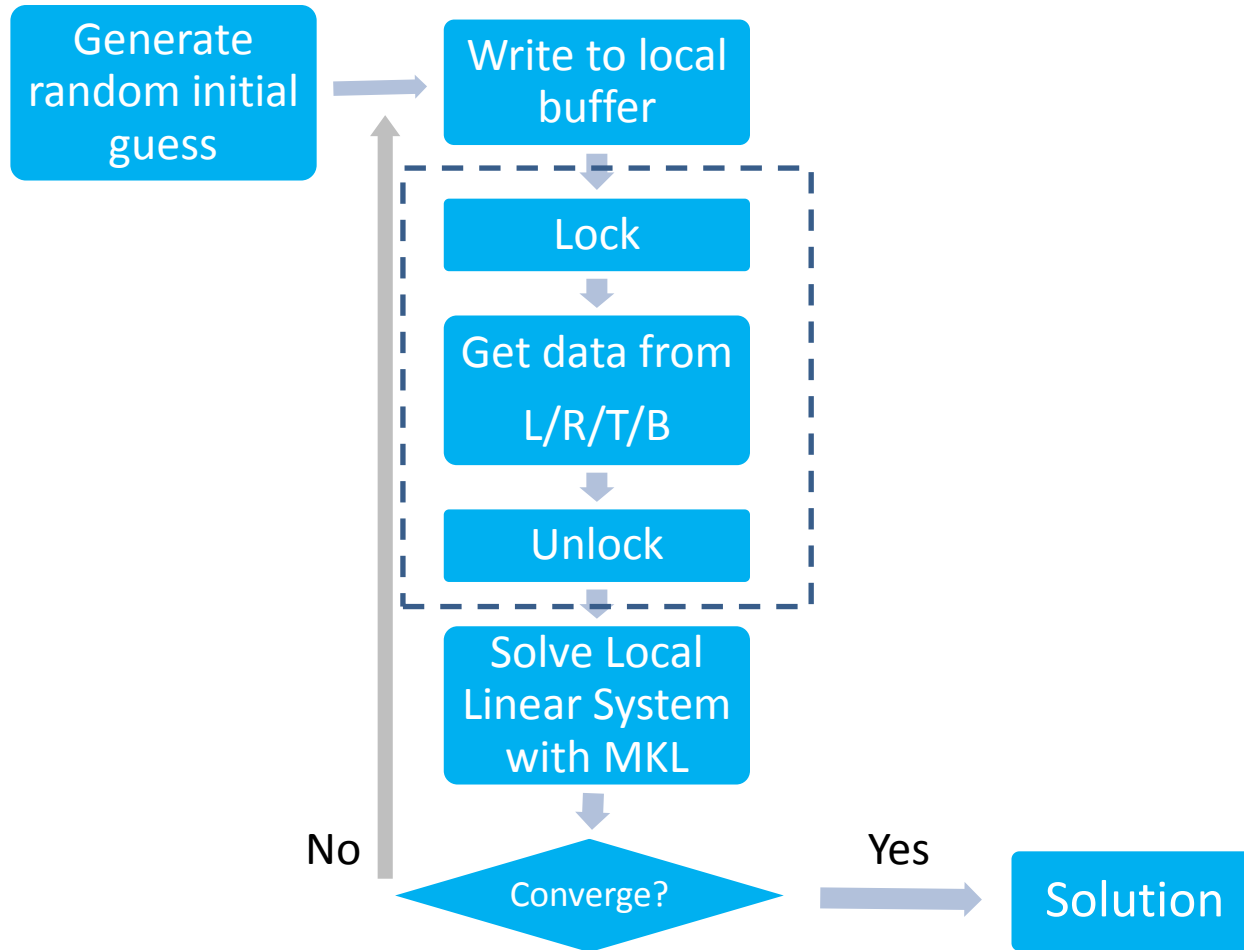## Topic2:

2D Jacobi Schwarz with MPI RMA and multiple threads in MKL

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Quick Review

- Grow the subdomain by *k* rows/columns

- Each subdomain only stores its local values

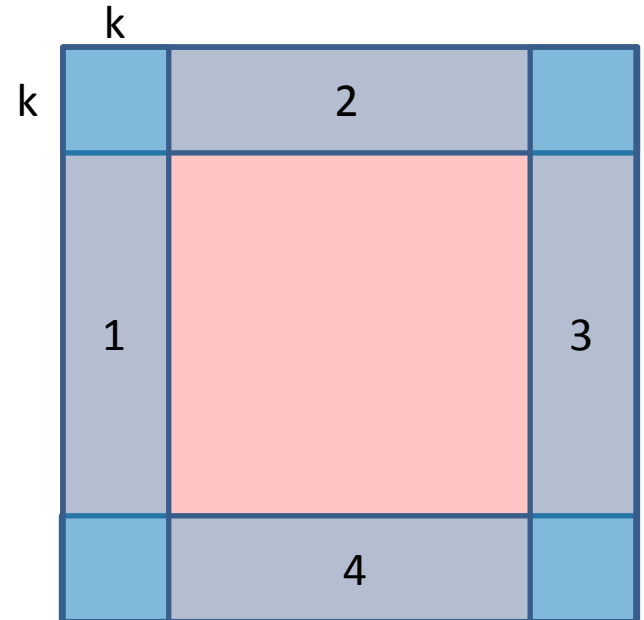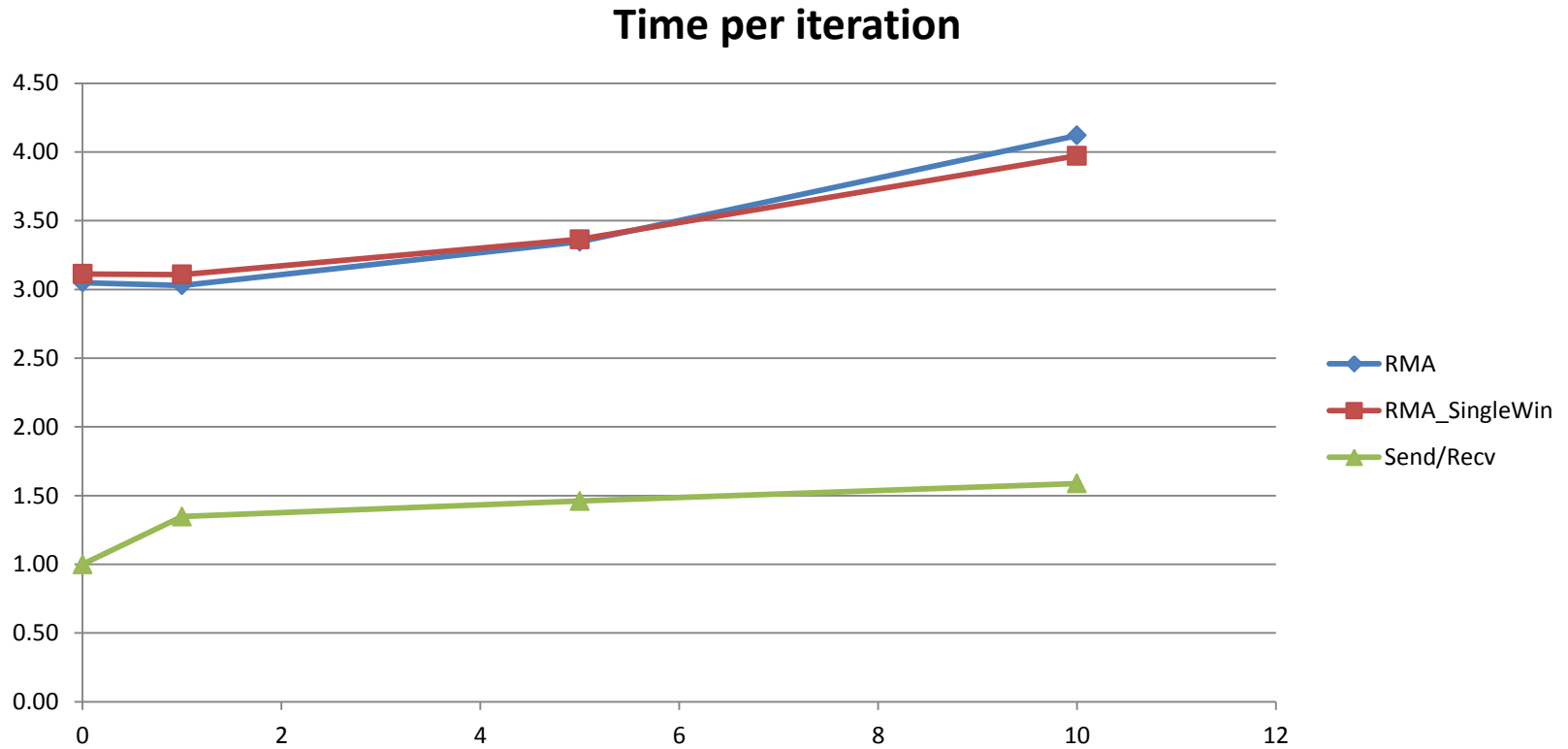- Read expanded area from where it's originally stored
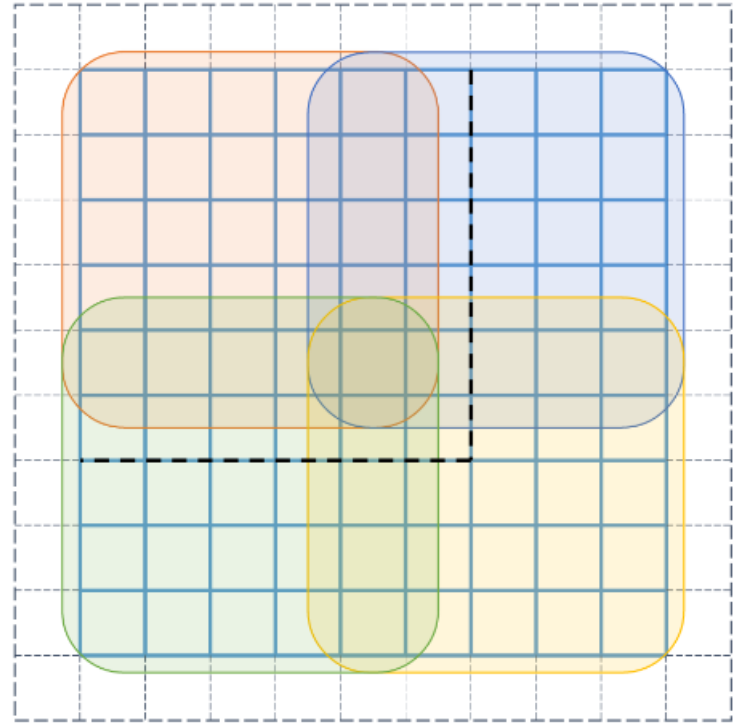
Work Flow

Shared Data

- In each process, 4 windows are available for remote access separately

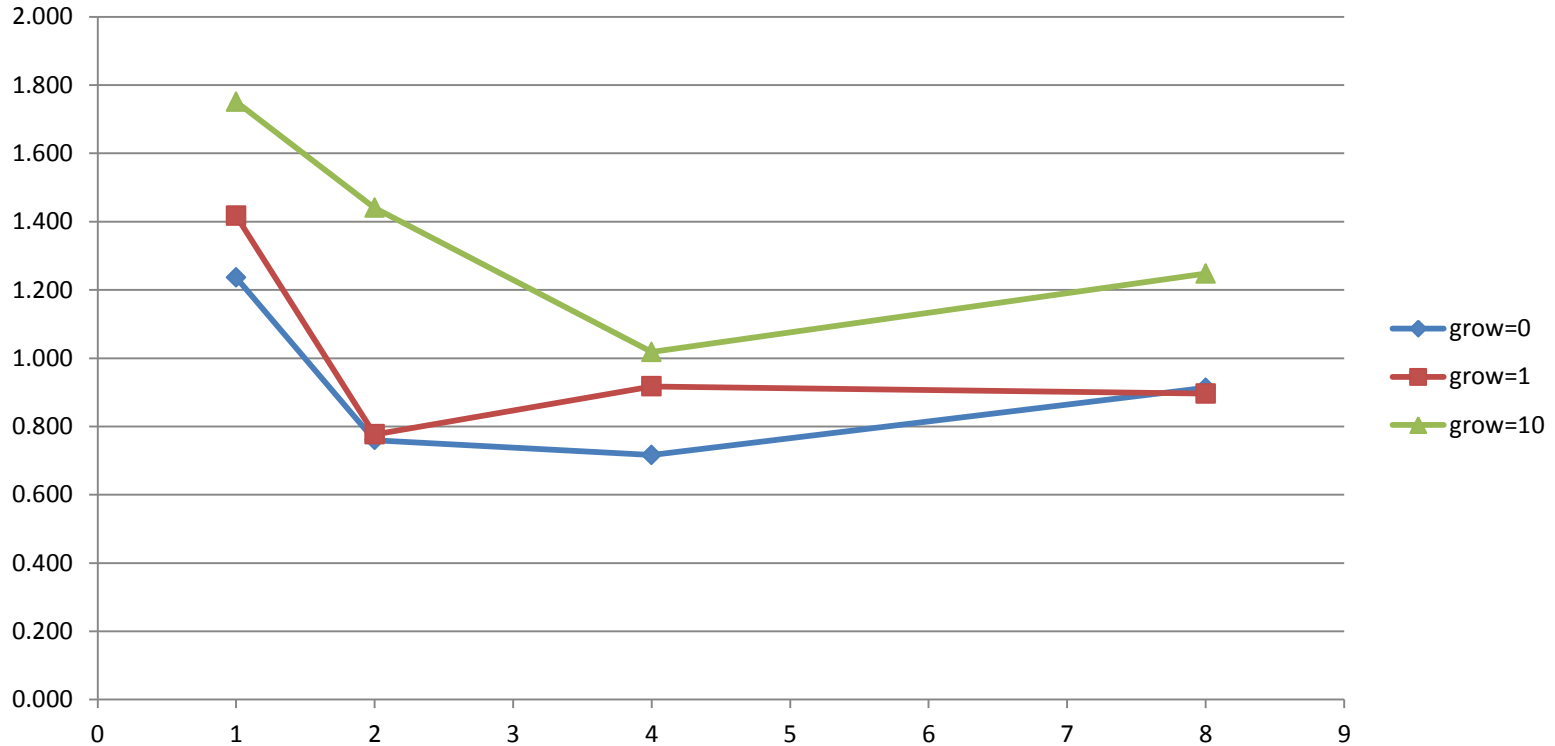- One process only reads from one window

Performance

Time per iteration

- Gotham mic4 / 100 x 100 grid / 10 x 6 processes / 500 iterations
- 1 thread per process

Performance

Multiple Threads in MKL

- Gotham mic4 / 100 x 100 grid / 10 x 6 processes / 500 iterations

Further improvement

- Optimize space complexity
  - Eliminate unnecessary buffers

- Analyze runtime and find the bottleneck