Under consideration for publication in J. Functional Programming

Plots for 'Arrows for Parallel Computations'

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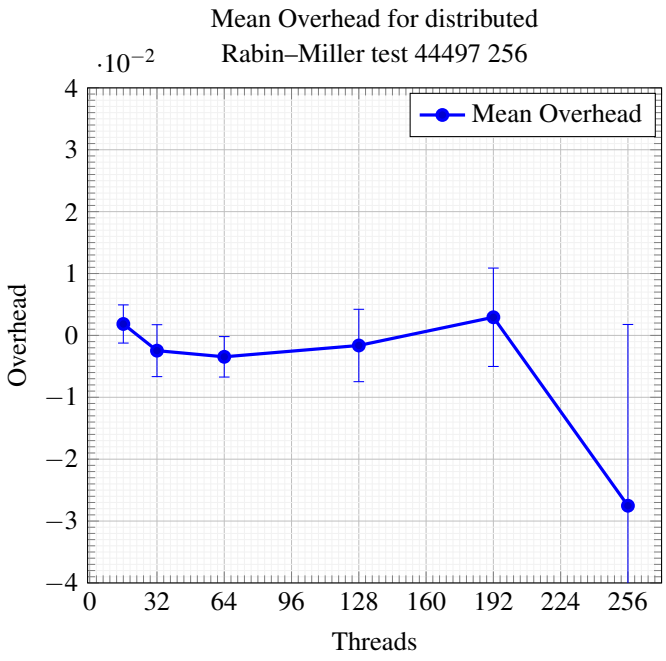
Contents

1 Distributed Plots 1
1.1 Rabin–Miller test 1
1.2 Jacobi sum test 3
1.3 Gentleman 4
2 Shared-Memory Plots 5
2.1 Rabin–Miller test 5
2.2 Sudoku 9
2.3 Gentleman 12

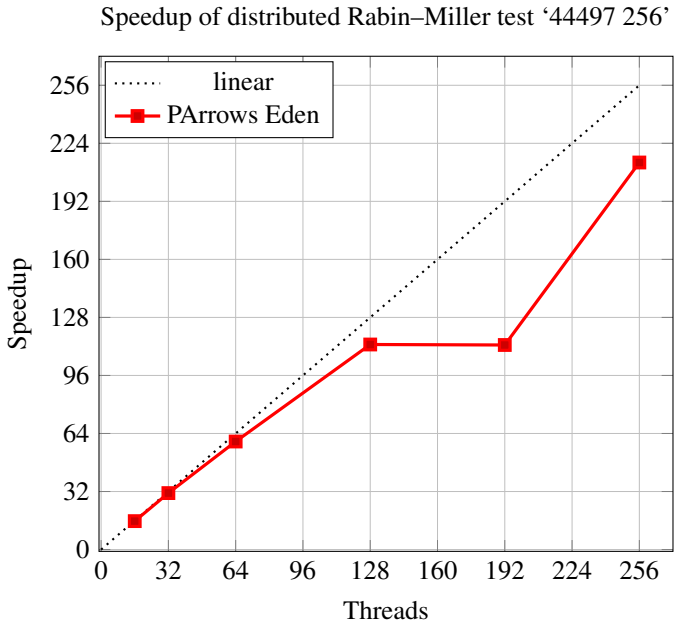
1 Distributed Plots

1.1 Rabin–Miller test

1.1.1 Overhead

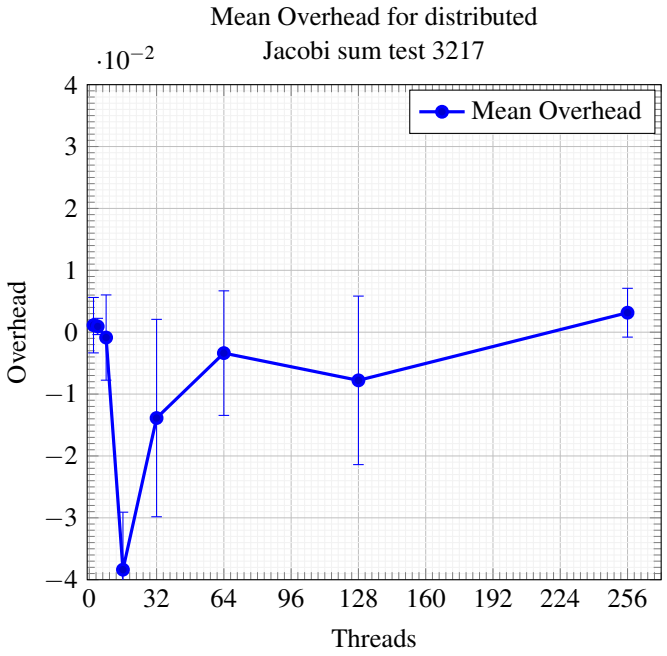

Mean Overhead for distributed
Rabin–Miller test 44497 256
$\cdot 10^{-2}$
Mean Overhead
Overhead
Threads
4
3
2
1
0
−1
−2
−3
−4
0
32
64
96
128
160
192
224
256

1.1.2 Speedup

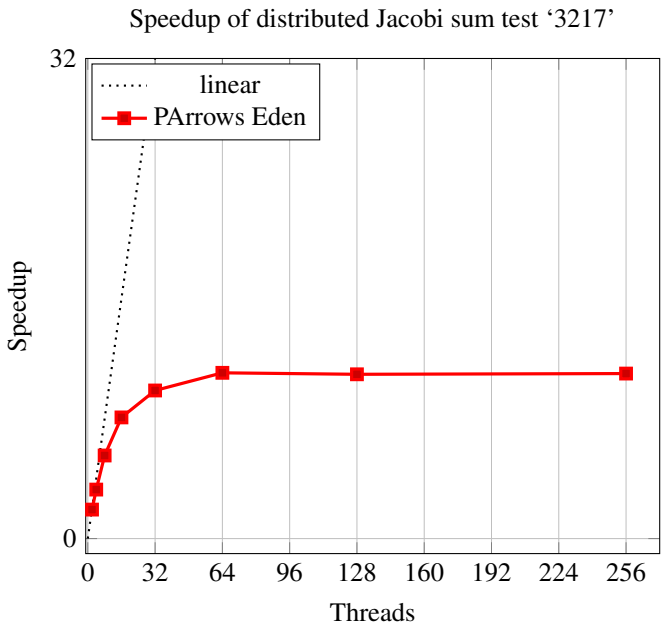

Speedup of distributed Rabin–Miller test ‘44497 256’
linear
PArrows Eden
Speedup
Threads
256
224
192
160
128
96
64
32
0
0
32
64
96
128
160
192
224
256

1.2 Jacobi sum test

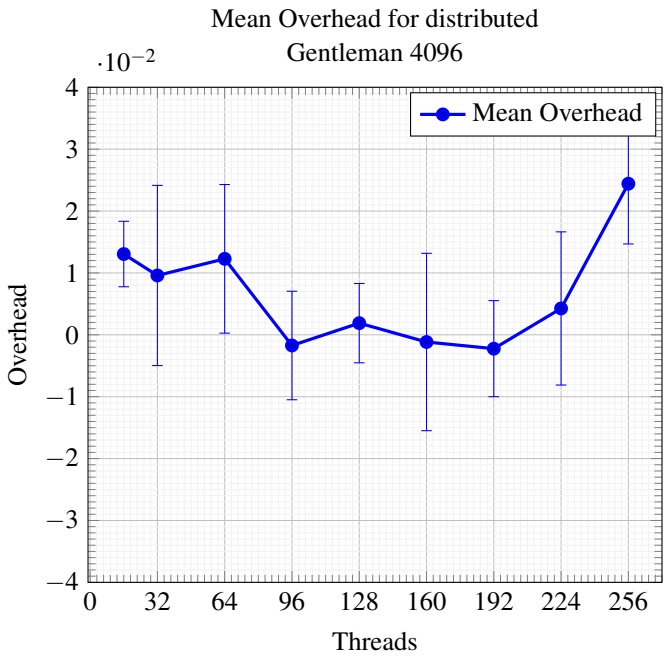
1.2.1 Overhead



1.2.2 Speedup

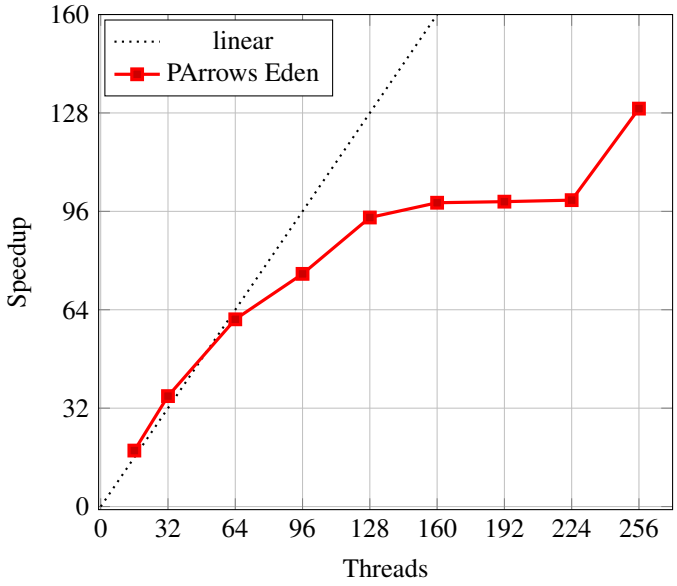


1.3 Gentleman



1.3.1 Speedup

Speedup of distributed Gentleman '4096'

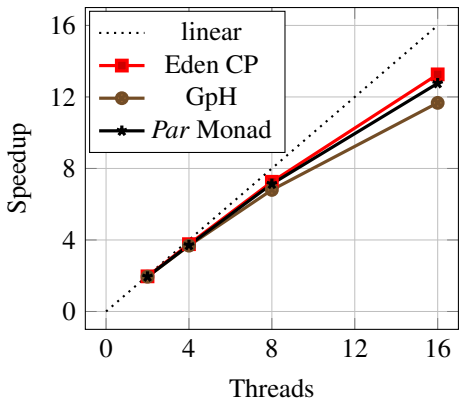


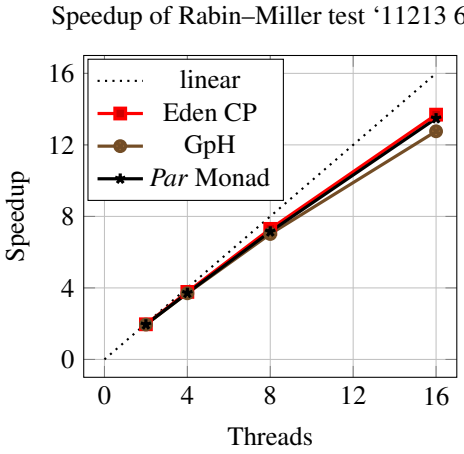
2 Shared-Memory Plots

2.1 Rabin–Miller test

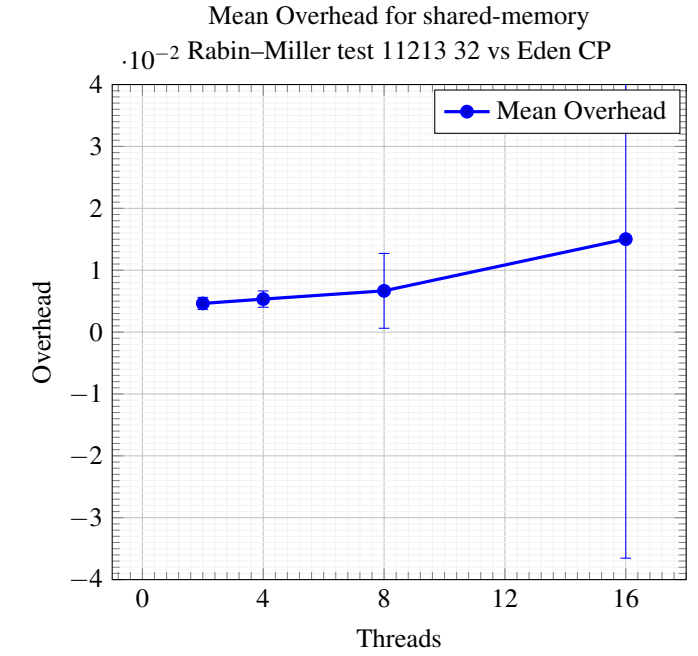
2.1.1 Speedup

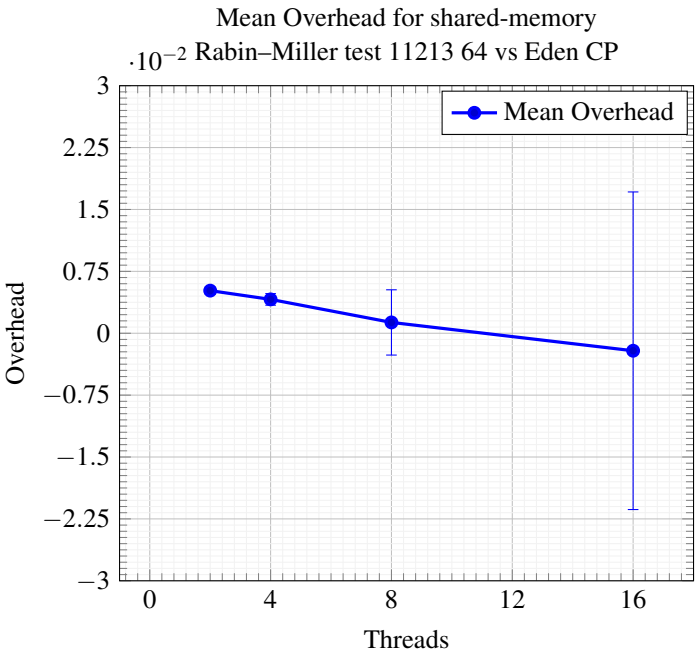
Speedup of Rabin–Miller test '11213 32'

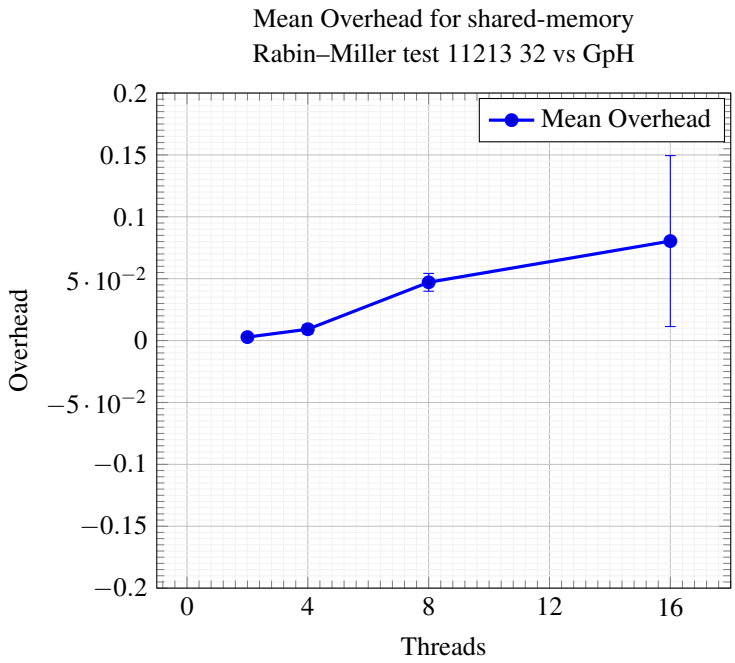


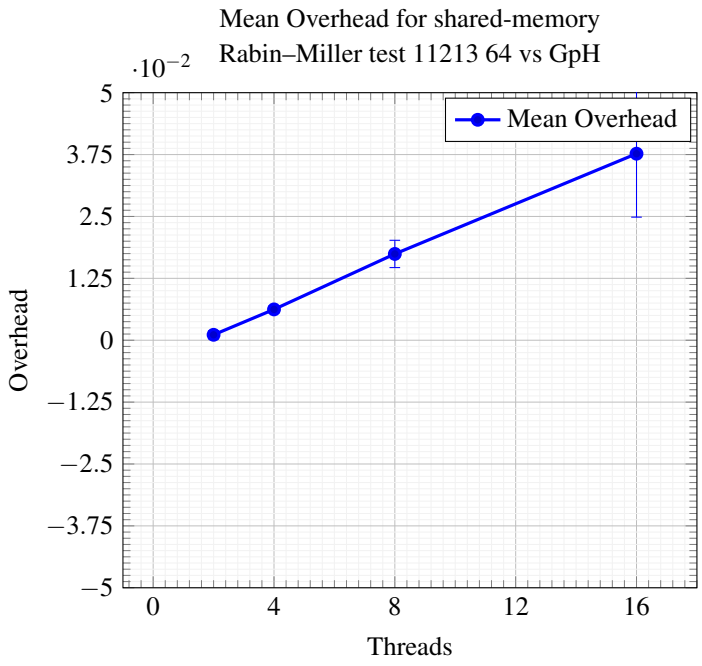


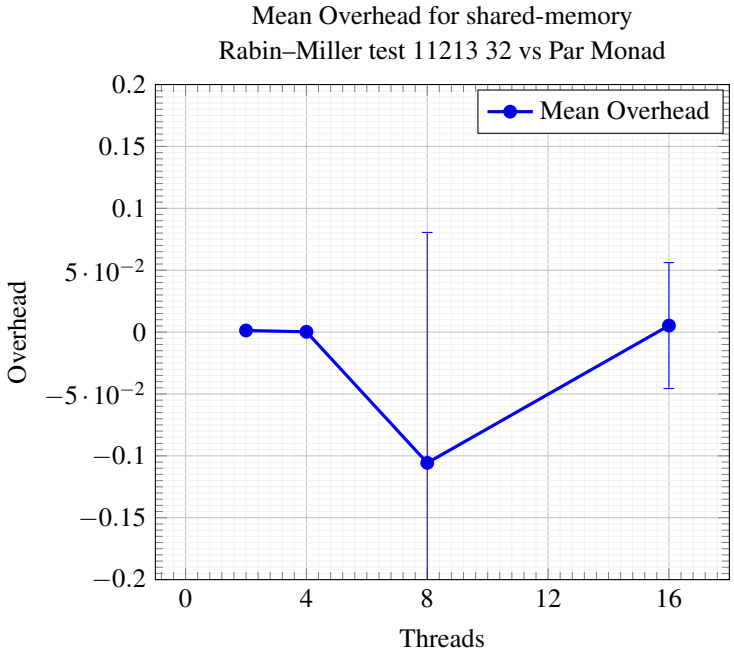
2.1.2 Overhead

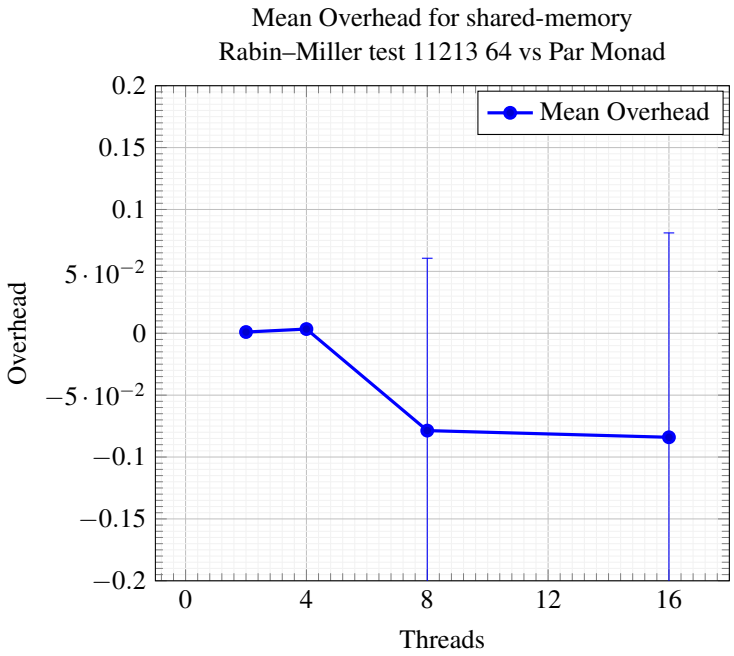

Mean Overhead for shared-memory
Rabin–Miller test 11213 32 vs Eden CP
$\cdot 10^{-2}$
Mean Overhead
Overhead
Threads
4
3
2
1
0
−1
−2
−3
−4
0
4
8
12
16


Mean Overhead for shared-memory
Rabin–Miller test 11213 64 vs Eden CP
$\cdot 10^{-2}$
Mean Overhead
Overhead
Threads
3
2.25
1.5
0.75
0
−0.75
−1.5
−2.25
−3
0
4
8
12
16


Mean Overhead for shared-memory
Rabin–Miller test 11213 32 vs GpH
Mean Overhead
Overhead
Threads
0.2
0.15
0.1
5 · 10−2
0
−5 · 10−2
−0.1
−0.15
−0.2
0
4
8
12
16

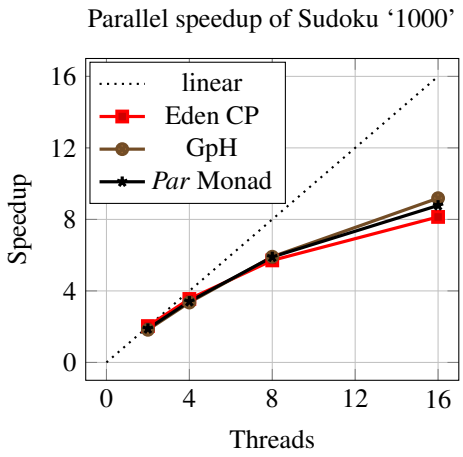

Mean Overhead for shared-memory
Rabin–Miller test 11213 64 vs GpH
·10−2
Mean Overhead
Overhead
Threads
5
3.75
2.5
1.25
0
−1.25
−2.5
−3.75
−5
0
4
8
12
16



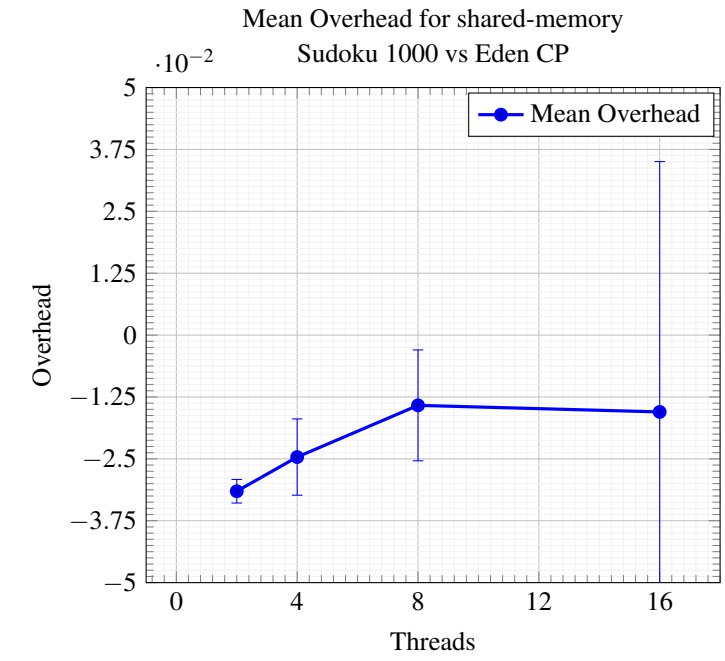


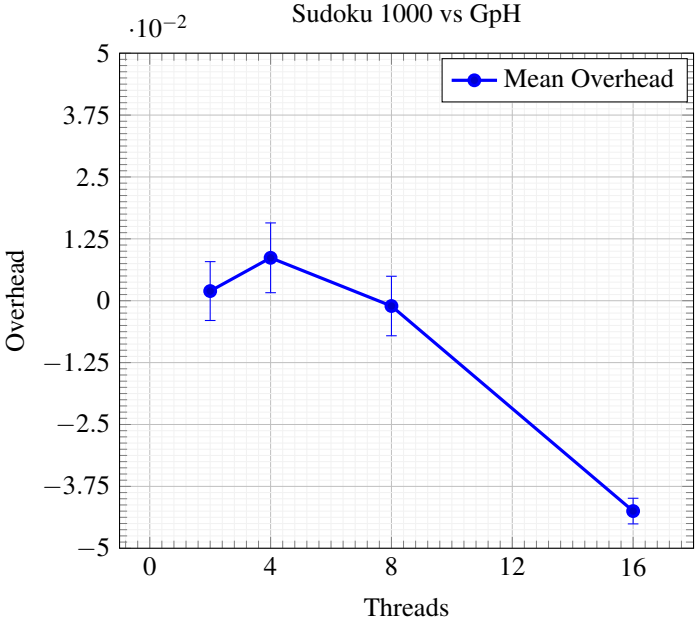
2.2 Sudoku

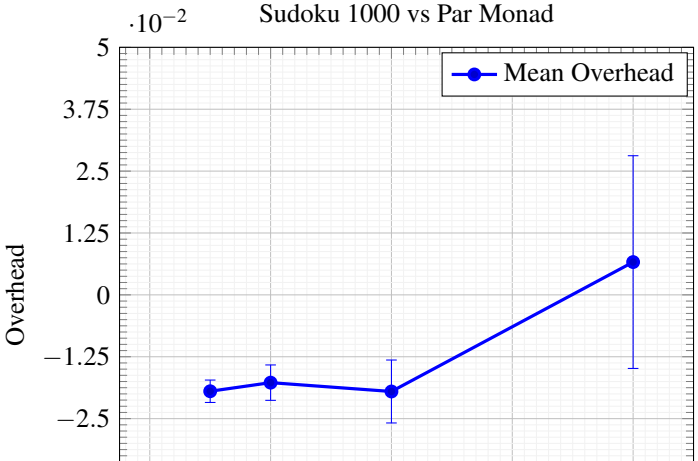
2.2.1 Speedup



2.2.2 Overhead

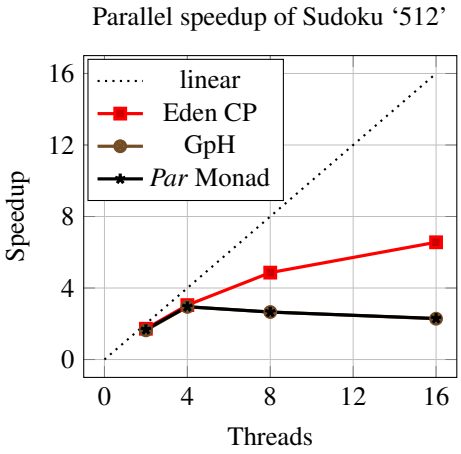
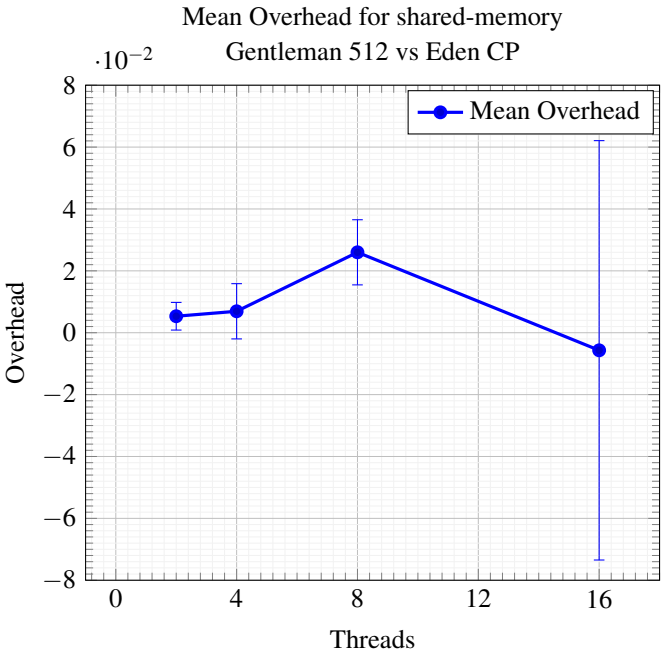

Mean Overhead for shared-memory
Sudoku 1000 vs Eden CP
$\cdot 10^{-2}$
5
3.75
2.5
1.25
0
−1.25
−2.5
−3.75
−5
Overhead
Mean Overhead
0
4
8
12
16
Threads


Mean Overhead for shared-memory
Sudoku 1000 vs GpH
$\cdot 10^{-2}$
5
3.75
2.5
1.25
0
−1.25
−2.5
−3.75
−5
Overhead
Mean Overhead
0
4
8
12
16
Threads


Mean Overhead for shared-memory
Sudoku 1000 vs Par Monad
$\cdot 10^{-2}$
5
3.75
2.5
1.25
0
−1.25
−2.5
Overhead
Mean Overhead

2.3 Gentleman

2.3.1 Speedup



2.3.2 Overhead