ICSI 520 Distributed & Parallel Computing - Fall 2019

Homework 5

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Results:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Matrix size(n)** | **Number of threads (p)** | **Serial execution time (microseconds)** | **Parallel execution time (microseconds)** | **Speedup** |
| 10 | 4 | 6.6 | 253.4 | 0.02605 |
| 30 | 4 | 6.0 | 251.8 | 0.02383 |
| 50 | 4 | 667.6 | 509.0 | 1.31159 |
| 75 | 4 | 664.4 | 498.8 | 1.33200 |
| 100 | 4 | 5079.6 | 2097.6 | 2.42162 |
| 100 | 8 | 5079.6 | 1665.2 | 3.05044 |
| 300 | 4 | 136315.6 | 47586.2 | 2.86460 |
| 300 | 8 | 136315.6 | 25344.2 | 5.37857 |
| 500 | 4 | 628715.0 | 215236.6 | 2.92104 |
| 500 | 8 | 628715.0 | 137280.8 | 4.57977 |
| 750 | 4 | 2098148.0 | 719225.8 | 2.91723 |
| 750 | 8 | 2098148.0 | 450194.6 | 4.66054 |
| 1000 | 4 | 4951027.6 | 1705210.2 | 2.90347 |
| 1000 | 8 | 4951027.6 | 864214.2 | 5.72894 |
| 1000 | 16 | 4951027.6 | 557643.2 | 8.87849 |
| 1000 | 24 | 4951027.6 | 457701.0 | 10.81717 |

make A.csv B.csv MAT\_SIZE=N

srun -n1 -c1 Homework5\_Serial.out

srun -n1 -c4 Homework5\_Parallel.out 4

(Averaging 5 shortest runs out of 30 runs)

(Number of cores is kept same as number of threads)