ICSI 520 Distributed & Parallel Computing - Fall 2019

Homework 4

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Results:

|  |  |  |  |
| --- | --- | --- | --- |
| **Serial execution time (microseconds)** | **Number of threads (w)** | **Parallel execution time (microseconds)** | **Speedup** |
| 39483.4 | 1 | 50402.8 | 0.78336 |
| 39484.4 | 2 | 26180.4 | 1.50817 |
| 39485.4 | 3 | 18187.8 | 2.17098 |
| 39486.4 | 4 | 14565.6 | 2.71094 |
| 39487.4 | 5 | 12845.2 | 3.07410 |
| 39488.4 | 6 | 11663.2 | 3.38573 |
| 39489.4 | 7 | 11560 | 3.41604 |
| 39490.4 | 8 | 10313.2 | 3.82911 |
| 39491.4 | 9 | 9712.8 | 4.06591 |
| 39492.4 | 10 | 9820 | 4.02163 |
| 39493.4 | 11 | 9616.8 | 4.10671 |
| 39494.4 | 12 | 9417.8 | 4.19359 |
| 39495.4 | 13 | 9688.8 | 4.07640 |
| 39496.4 | 14 | 9467.8 | 4.17166 |
| 39497.4 | 15 | 9372.2 | 4.21431 |
| 39498.4 | 16 | 9298.8 | 4.24769 |
| 39499.4 | 17 | 9389 | 4.20699 |
| 39500.4 | 18 | 9358.2 | 4.22094 |
| 39501.4 | 19 | 9175.2 | 4.30524 |
| 39502.4 | 20 | 9199 | 4.29421 |
| 39503.4 | 21 | 9337.4 | 4.23066 |
| 39504.4 | 22 | 9601.4 | 4.11444 |
| 39505.4 | 23 | 9507.8 | 4.15505 |
| 39506.4 | 24 | 9337 | 4.23117 |
| 39507.4 | 25 | 9484.6 | 4.16543 |

srun -n1 -c1 Homework4\_Serial.out

srun -n1 -c12 Homework3\_Parallel.out w

(Averaging 5 runs)

(Parallel execution with 12 cores, more cores increased execution time)

Sample Output:

$ srun -n1 -c12 Homework4\_Parallel.out 12

Worker #01 finished. Found 4429 unique word(s).

Worker #00 finished. Found 2923 unique word(s).

Worker #05 finished. Found 4432 unique word(s).

Worker #10 finished. Found 2874 unique word(s).

Worker #06 finished. Found 4128 unique word(s).

Worker #03 finished. Found 4709 unique word(s).

Worker #08 finished. Found 3881 unique word(s).

Worker #02 finished. Found 5163 unique word(s).

Worker #11 finished. Found 4876 unique word(s).

Worker #07 finished. Found 4920 unique word(s).

Worker #04 finished. Found 6102 unique word(s).

Worker #09 finished. Found 8827 unique word(s).

9365 microseconds occured

Number of Unique Words: 57264

Number of Unique Words (length >= 6): 43908