***Timing Analysis: Count 3’s***

The speedup is defined as the ratio of the serial runtime of the best sequential algorithm for solving a problem to the time taken by the parallel algorithm to solve the same problem on p processors.

S = /Ps

The time execution of the program with 250,000 (***count3s250t.cpp***) elements is:

|  |  |
| --- | --- |
| Date and Time | Tue Feb 2 20:02:24 CST 2021 |
| TACC: | Starting up job 7228519 |
| TACC: | Starting parallel tasks... |
| Number of 3's | 124992 |
| TACC | Shutdown complete. Exiting. |
| Latency | 18 seconds |

The time execution of the program with 10,000,000 (***count3s.cpp***) elements is:

|  |  |
| --- | --- |
| Date and Time | Tue Feb 2 19:18:40 CST 2021 |
| TACC | Starting up job 7228375 |
| TACC | Starting parallel tasks... |
| Number of 3's | 500000 |
| TACC | Shutdown complete. Exiting. |
| Latency: | 20 seconds |

The latency’s difference between counting 10,000,000 and 250,000 elements in this case is just by 2 seconds. Counting 40 times the quantity of elements (10,000,000 / 250,000 = 40), meant just an increment of the 11.1% of the time of 18 seconds (18s + 11.1% = 20s). The only reason I can see for such an incredible result is overhead (Time in which the different processors are set up and coordinate with each other). Such a small difference of times between such a big difference between quantities of elements is absurd. Definitely, there is a lot of more to discover about this interesting and extensive subject.