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**Day 07 – Mar 04**

**Matrix Multiplication**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Serial** | **Parallel Row** | | **Parallel Individual** | | **Parallel Group** | |
| **Time** | **Time** | **Speedup** | **Time** | **Speedup** | **Time** | **Speedup** |
| Size: 1000 | 7343 | 4170 | 1.760911271 | 66997 | 0.109601922 | 5843 | 1.25671744 |
| Size: 2000 | 75742 | 34119 | 2.219936106 | 258840 | 0.292620924 | 37410 | 2.024645817 |
| Size: 3000 | 288991 | 126494 | 2.284622196 | 630047 | 0.458681654 | 140261 | 2.060380291 |

Based on the above results, we can see:

* Parallel Individual is a slowest solution due to the thread creation per each node in the result matrix. The thread creation overheads and slows down the system.
* Row and Group solutions provides similar results:
  + Row solution creates a lot of threads; however, the computation takes full row, then it closes and releases for other threads.
  + Group solution creates threads based on the available processors, so it doesn’t create much overhead; however, it has to work on a larger size for computation.