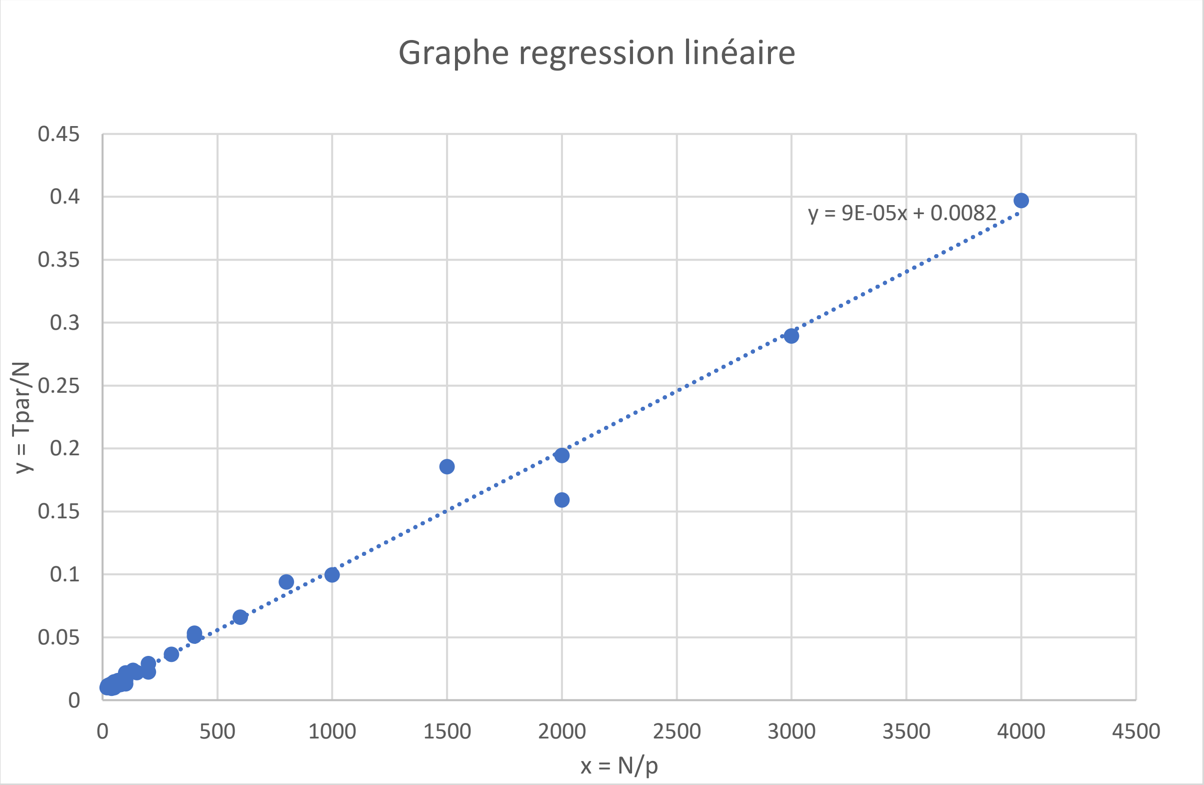
Results: (nb iterations = 1800)

SIZE : NB TASKS :	2000x2000 (Tseq + Tp)	3000x3000 (Tseq + Tp)	4000x4000 (Tseq + Tp)	2000x2000 (Tp)	3000x3000 (Tp)	4000x4000 (Tp)
1	06 :40	14 :32	26 :35	06 :38	14 :28	26 :28
2	03:21	09 :21	10 :43	03 :19	09 :17	10 :36
5	01:44	03 :22	06 :23	01 :42	03 :18	06 :16
10	00 :47	01 :53	03 :40	00 :45	01 :49	03 :33
20	00 :28	01 :10	02 :03	00 :26	01 :06	01 :56
30	00 :33	00 :52	01 :42	00 :31	00 :48	01 :35
40	00 :31	00 :45	01 :34	00 :29	00 :41	01 :27
50	00 :28	00 :40	00 :57	00 :26	00 :36	00 :50
60	00 :26	00 :34	00 :55	00 :24	00 :30	00 :48
70	00 :26	00 :37	00 :57	00 :24	00 :33	00 :50
80	00 :23	00 :40	00 :55	00 :21	00 :36	00 :48
90	00 :25	00 :38	00 :52	00 :23	00 :34	00 :45
100	00 :22	00 :35	00 :45	00 :20	00 :31	00 :38

These are the results for the total execution time (Tseq + Tp), the sequential part of the code is not affected by the total number of cores awarded for this computation, it is only dependant on one core, and the total size of the matrix.

Size:	2000x2000	3000x3000	4000x4000
Sequential Time (s):	2.34074	4.47615	7.14863

Linear regression:



And the Equation of this linear regression is:

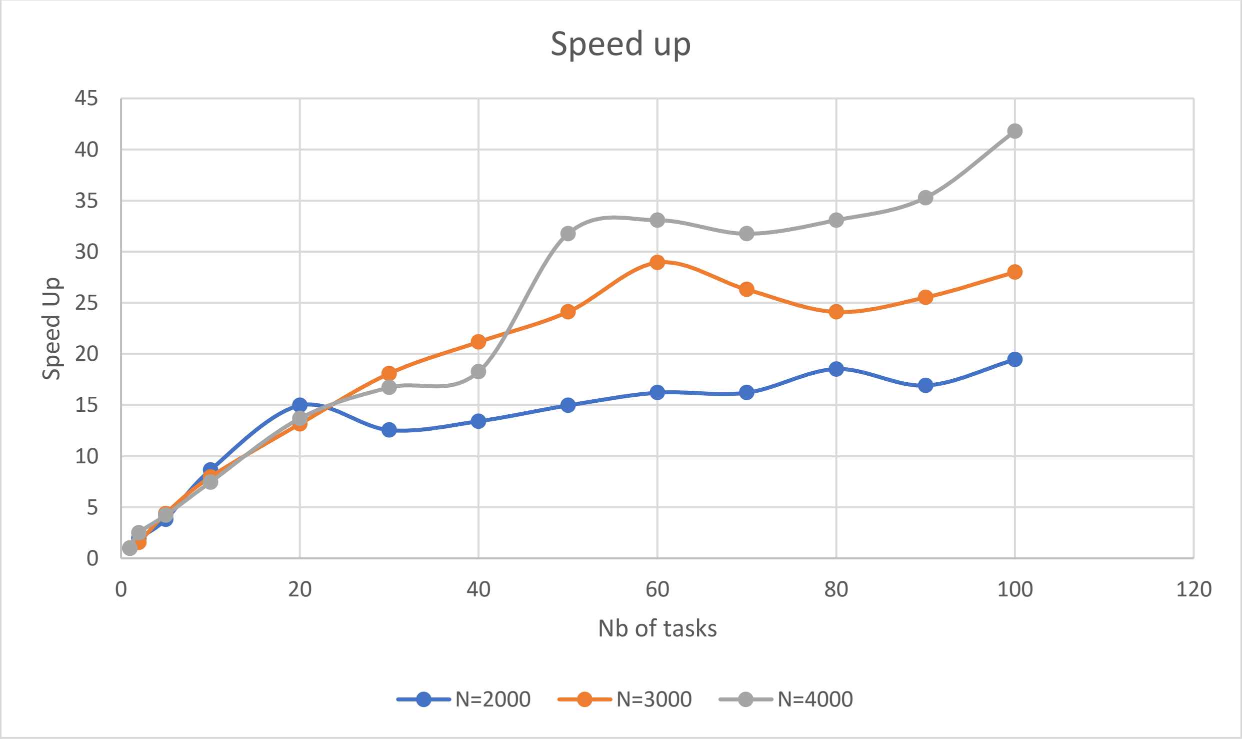
Y = (9*10^(-5)) * x + 0.0082

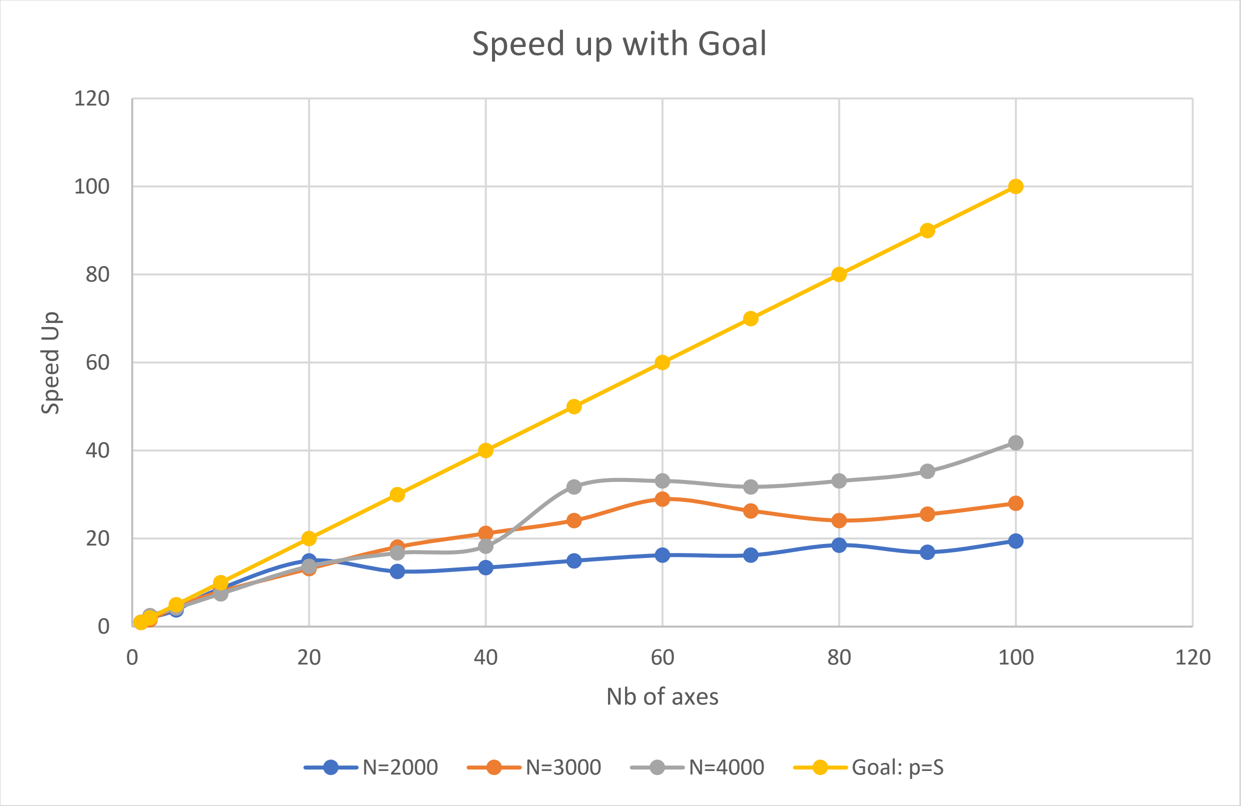
Which means:

Alpha = 9*10^(-5)

Beta = 0.0082

Speed Up:





It is easier to see how far off we are from our goal if we map the goal line.

Gamma:

With the formula 6, we know that Gamma is less or equal than 1/S.

Max S is equal to 44.

Gamma <= 1/44 = 0.0227

Discussion of results:

The most interesting thing for me, is that the speed up gets much better results for a bigger matrix, so if we were to do computations with larger matrices, we would technically get better speed up ratios, and eventually get closer to the Goal line. Not predicting that we will get to 100 speed up, but the closer the better.

We can also see that sometimes more cores got us worse time results than less cores, I would not take this into account, to have the real time of the computation we would need to perform the program many times and average the results. That would most likely give us a growing curve.

However, one very interesting point as well, is that the better results / cores used ratio is around the 60 cores mark for all the matrix sizes, this means that there is an advantage to do the computation with more cores after the 60 mark, but it is not as cost effective, since we take less advantage of it.

For the results I used the correction of TP2.