

MPI code to make sum of n numbers using algorithmic approaches : binary divide and conquer, m-ary divide and conquer

> Cpu Specs:

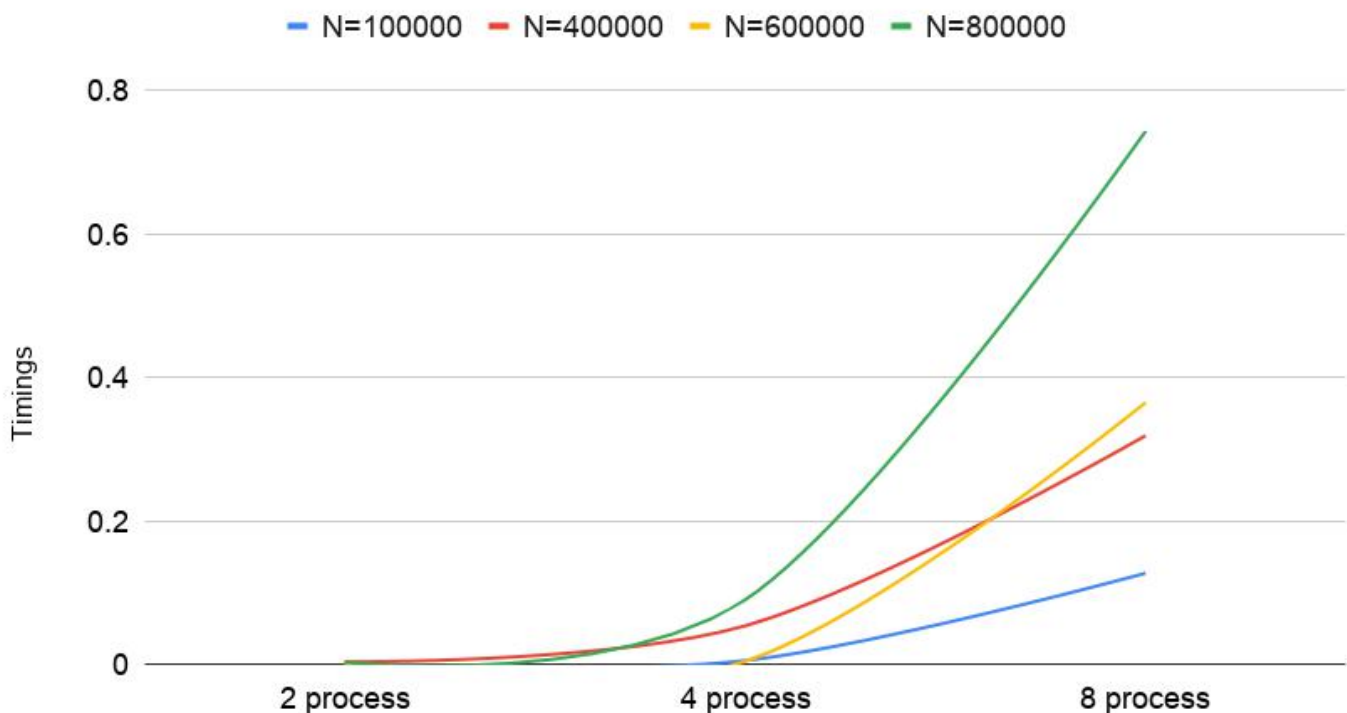
Memory 5.8 GiB
Processor Intel® Core™ i3-4130 CPU @ 3.40GHz × 4
Graphics Intel® Haswell x86/MMX/SSE2

> SUM of N numbers using Binary Divide and conquer:

Its analysis By changing N and number of processes

	N=100000	N=400000	N=600000	N=800000
2 process	0.00166	0.003819	0.002458	0.003354
4 process	0.005577	0.053971	0.004479	0.090181
8 process	0.12743	0.319172	0.36525	0.743576

Binary Divide And Conquer



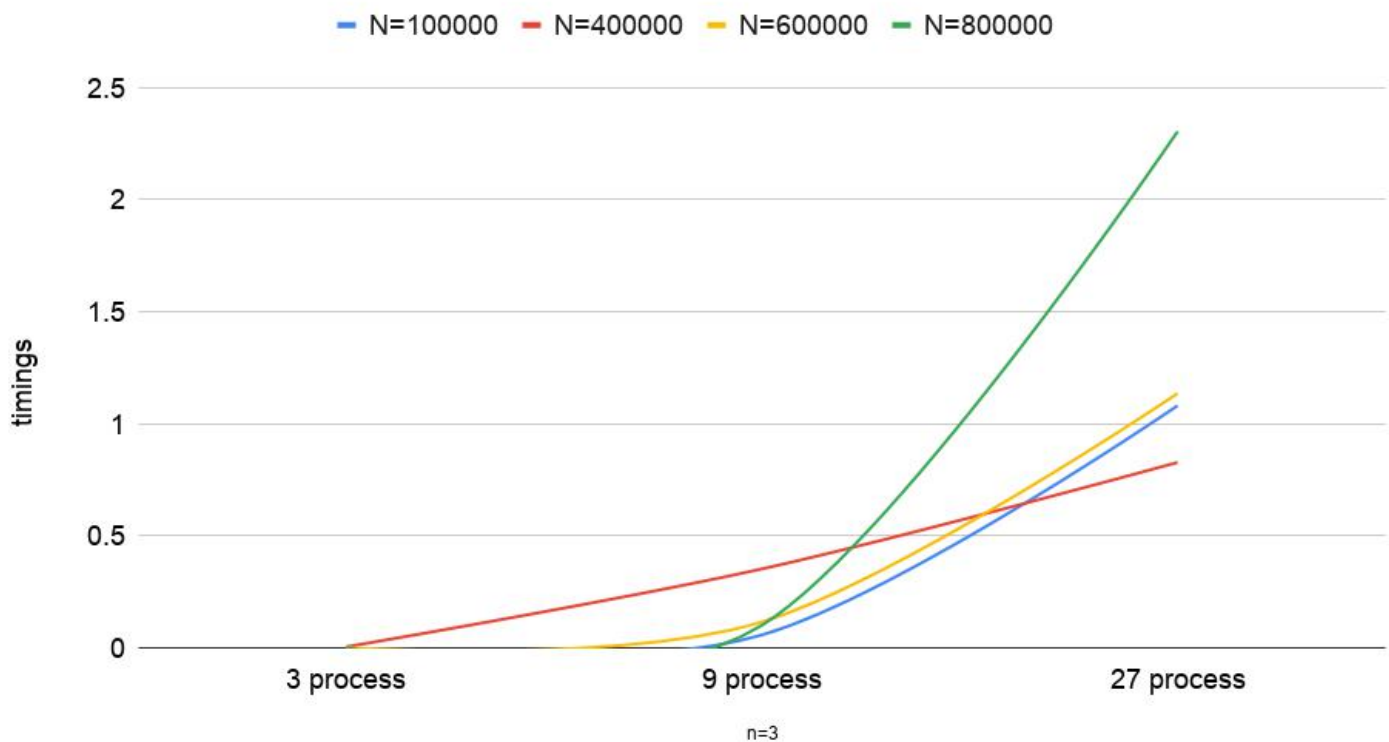
> SUM of N numbers using m-ary Divide and conquer:

Here we have taken $m = 3$

Its analysis By changing N and number of processes

	N=100000	N=400000	N=600000	N=800000
3 process	0.001919	0.005203	0.002121	0.003232
9 process	0.057949	0.352826	0.115973	0.101197
27 process	1.081595	0.828053	1.136108	2.305257

m-ary Divide and Conquer



Conclusion:

- By comparing binary divide and conquer and m-ary divide and conquer we can see that in both cases if no of processes increases for each N , time increases as we do not have more number of processors or cores available.
- If compare this with the practical 4 techniques the execution time execution time taken decreases for small number of processes and comparing this both techniques execution time of binary divide and conquer takes less execution time because m-ary divides it into three parts but for that number of processor required are more to increase the speed because m-ary divide and conquer required more parallel computing power