

CS575(Introduction To Parallel Programming)
Project2

Project Title : Numeric Integration with OpenMP Reduction(Project 2)

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The code was run on flip2.

If the large number of nodes is used, more accurate Volume value can be achieved. My volume results are around 6.48.

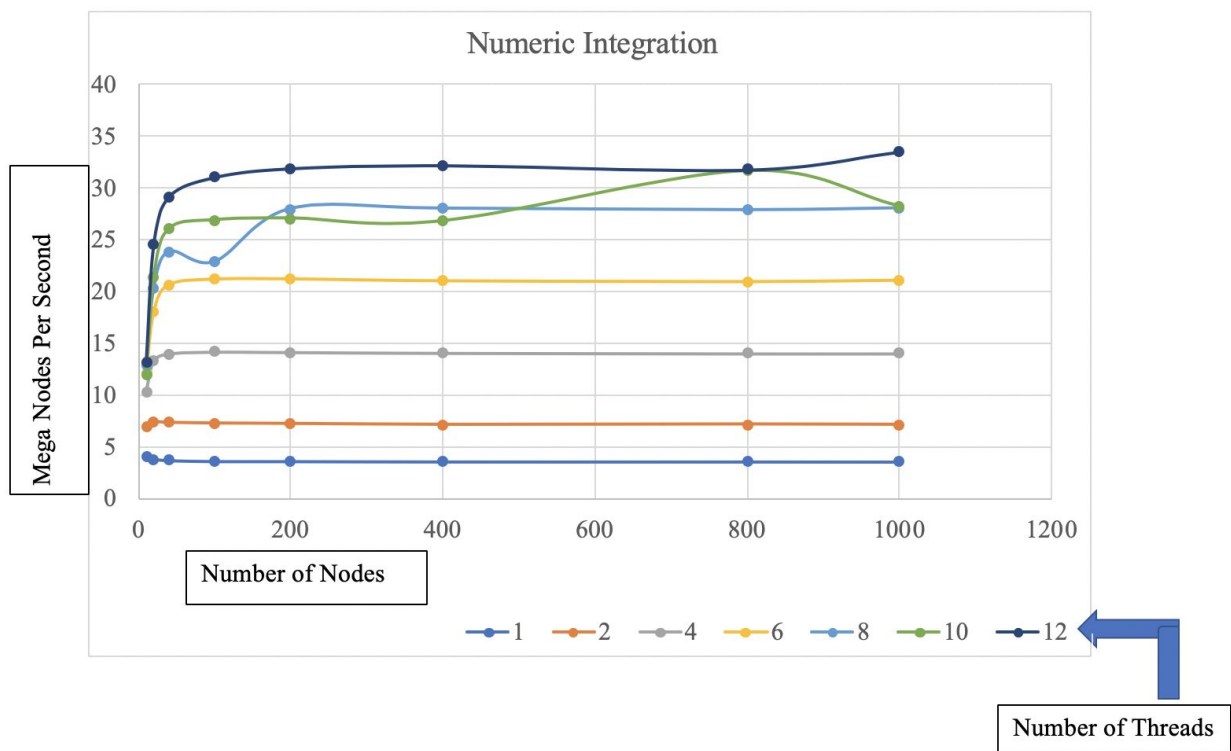
The Parallel Fraction is over 0.95 for almost all pairs of different number of threads and different number of nodes.

The Maximum Speed-Up I attained is 9.16 when the Number of Threads is 10, Parallel Fraction 0.99 and the Number of Nodes 1000.

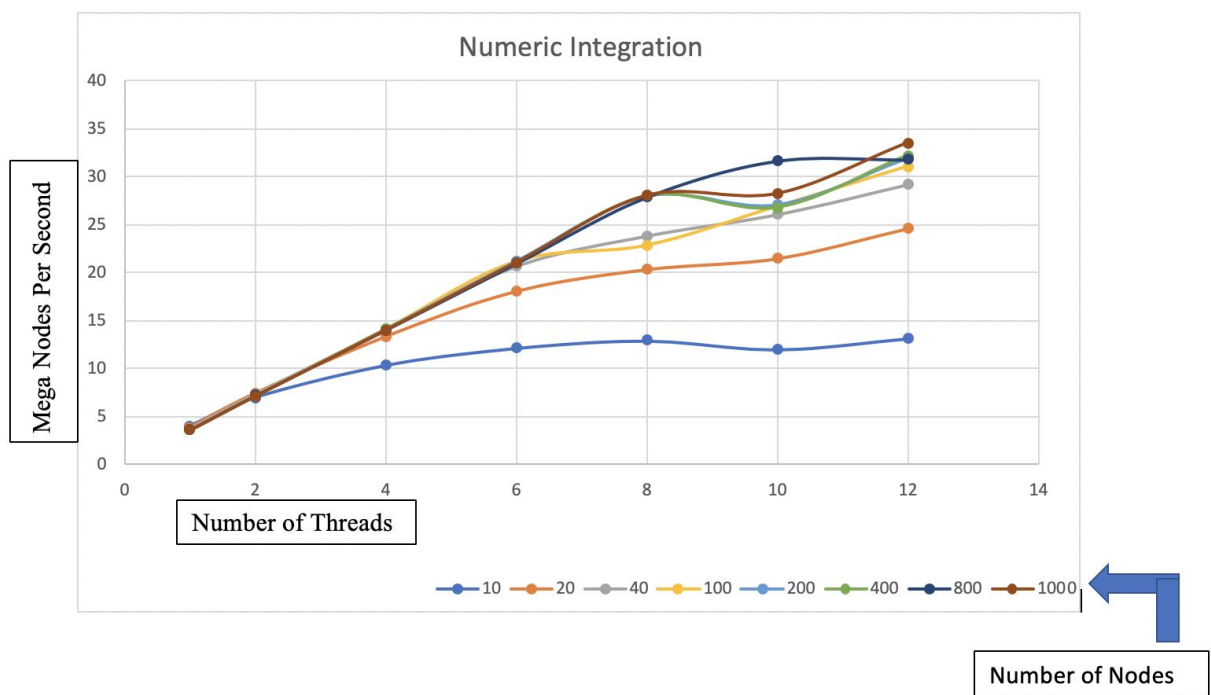
The notable fact from the graph is the line which corresponds to running with 10 threads and the line which corresponds to the 8 threads. I personally believe that the cause of these lines being not as stable as other lines is the allocation of proportions of the loop to the threads.

The graphs are in the next pages.

The graph of performance and number of nodes.



The graph of performance and number of threads.



The tables of Performance, Number of Nodes and Number of Threads.

Number of Nodes	Number threads	Performance
10	1	3.9807286
10	2	7.3292956
10	4	10.4039707
10	6	12.4643545
10	8	13.1537647
10	10	13.7632742
10	12	14.4972906
20	1	3.8126144
20	2	7.3296084
20	4	13.1925526
20	6	17.237442
20	8	21.9276428
20	10	21.5178719
20	12	24.0904579
40	1	3.6918604
40	2	7.3724327
40	4	13.9228878
40	6	20.6465244
40	8	23.3980064
40	10	25.4716587
40	12	29.7669888
100	1	3.6447837
100	2	7.2462654
100	4	14.145771
100	6	21.2158337
100	8	23.0724659
100	10	26.4774952
100	12	31.0510845

Number of Nodes	Number of Threads	Performance
200	1	3.6064126
200	2	7.1847167
200	4	14.0905943
200	6	21.2171917
200	8	28.1021805
200	10	26.6154518
200	12	31.2962265
400	1	3.5788405
400	2	7.1288738
400	4	13.9768209
400	6	21.0149155
400	8	28.016737
400	10	27.4657974
400	12	32.0995979
800	1	3.5698681
800	2	7.1312308
800	4	13.9699516
800	6	20.9154263
800	8	27.8232689
800	10	29.0964699
800	12	32.0454674
1000	1	3.5934792
1000	2	7.1878943
1000	4	14.0482903
1000	6	21.000843
1000	8	28.0825539
1000	10	29.144907
1000	12	31.6549511