Threads	OMP	MPI
1	18.4703	0.009117
2	11.5809	0.010661
3	9.977779	0.016873
4	9.516093	0.020736
5	9.963049	0.026396
6	10.16609	0.030138

One Processor MPI vs OMP
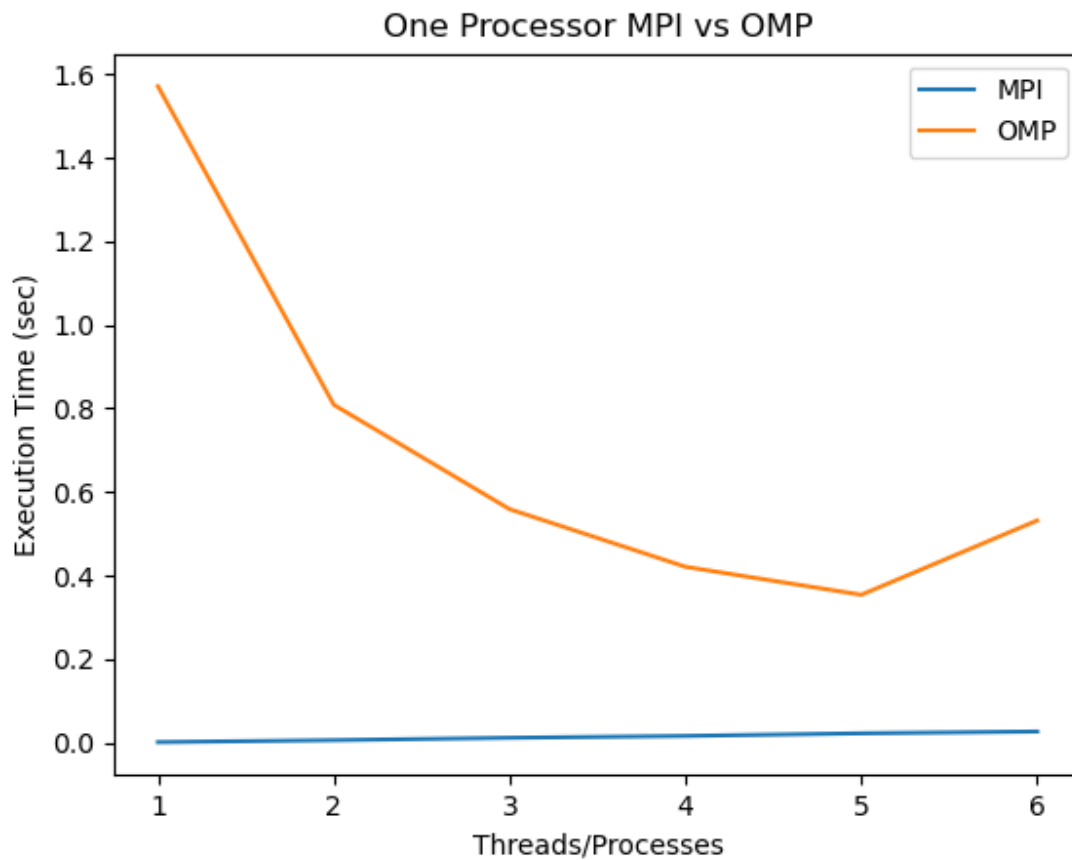
Based on this data, we can conclude that MPI is much more efficient, but it incurs overhead cost when running with more cores on a single processor. We see that OMP benefits from more threads.

Single Processor MPI vs Dual Processor MPI
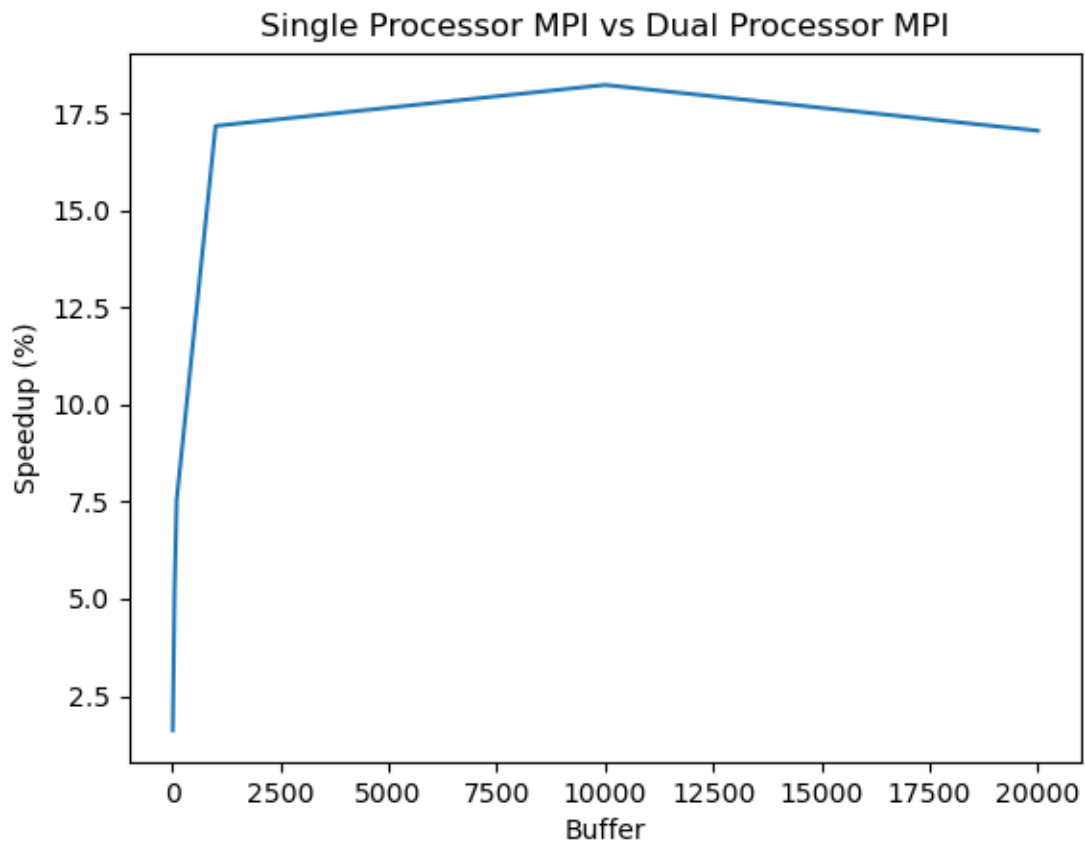
Here we see that the MPI program benefits the most from a buffer size of 10000. With further testing, we may find a more optimal value in between 10k and 20k. As buffer size went up, program sped up, but at a point it stopped speeding up because the repeating of work got to be too big