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Parallel and Grid Computing

Execution Time where n = 10,000,000

Sorting Method	Number of Processors: 2	Number of Processors: 4	Number of Processors: 8
Sort Direct	841.97543 – for 1,000,000 (computer took too long to run)	244.290868 – for 1,000,000 (computer took too long to run)	77.318656 – for 1,000,000 (computer took 4hours+ to run 10,000,000)
Sort Odd Even	0.728377	0.320057	0.178040
Sort Bucket	0.423022	0.293013	0.213558

Speedup Time

Sort Bucket: As the processors increase the speed-up for bucket sort method increases. Between 2 processors and 4 processors, there is an increase of 30%. Between 4 processors and 8 processors, there is an increase of 27%.

Sort Odd-Even: The speed-up between 2 processors and 4 processors had an increase of 56%. Between 4 and 8 processors, there was a speed-up of 44%. Again, since the work is distributed between more processors, there is an increase in speed-up when more processors are being used.

Sort Direct: The speed-up between 2 processors and 4 processors in use increased by %. The speed-up between 8 processors and 4 processors is 68%

Communication
The communication will increase with more processors due to the fact there is more data being passed forward and back for each processor.

Computation
The computation time will decrease with more processors in use, since there is less work to do for each processor as the work is shared between them.