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I parallelized my algorithm by taking a certain amount of bits from each number at a time (b each time), and putting those bits in p buckets based on each ones MSB. From there I sorted each bucket with LSB radix sort (implemented with counting sort). Then I gathered the buckets together into one array, and repeated the process for the remaining bits.

Below are the times (in seconds) for each sort, number of elements, and number of processors. I ran these with the bit option set to 8 for all of them. As you can tell, some of the larger data sets returned errors. I could not track down these segmentation faults, or why they only occurred in the large data sets.

The times for pthreads are entirely absent as I could not get it to actually sort. The code compiles, runs, and outputs numbers, but they are not in the right order.

MPI

	1	2	4	8
1k	.27	.13	.08	.05
100k	1.09	.43	.22	.15
1m	9.52	3.49	1.70	1.12
50m	538.43	211.93	91.10	58.98
100m	1080.78	437.53	309.45	Seg fault
300m	3224.08	2537.80	Error scattering	Seg fault

Open MP

	1	2	4	8
1k	.0074	.0039	.0022	.0012
100k	.81	.42	.22	.13
1m	8.83	4.45	2.32	1.32
50m	518.29	343.48	131.88	102.96
100m	1092.96	580.12	Seg fault	Seg fault
300m	Seg fault	Seg fault	Seg fault	Seg fault