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Intro to Algorithms

Count Strings Fork Join

Using my computer with 8 cores, I was definitely able to achieve linear speedup using the fork join algorithm, although it was rarely perfect linear speed up. Using 5 different thresholds spanning from 100 to 10,000,000, the best threshold seemed to be 10,000, as the fastest ratio was 0.1 compared to the sequential algorithm, which is around perfect linear speed up, and the highest was just 0.41, still over a 200% speed increase from the sequential algorithm. As is clear in the graph below, 10,000 was often the fastest of the five. Even the slowest of the five thresholds, 100, still was faster than the sequential algorithm, slowing down substantially at the highest array size, yet still resulting in a ratio of 0.68. Based on my experiments, it's quite clear that fork join is very effective and can help utilize all the cores of a machine to speed up an algorithm.



