Time to Run Quicksort

Y-axis: Time (Lower is Better)
X-axis: Parallel Recursion Depth

# of Threads: 1, 2, 4, 6, 8, 12, 16, 20

% Speed-up at Optimal Parallel Recursion Depth

Y-axis: % Speed-up
X-axis: # of Threads

Using a seed of 42 and varying the number of processing threads and parallel recursion depth, the time for running quicksort on 300,000,000 integers was benchmarked. Once the optimal parallel recursion depth was found, the percent speed-up in comparison to a serial sort was calculated.

As the results show, quicksort scales decently well on multicore machines up to a certain number of processing threads. The rlogin machines each use 2x Intel Xeon x5647 quad core processors, thus 8 cores are available for data processing. As the % speed-up shows, the increase in computational speed starts to slow down at around 8 threads.