



From that chart above, it can be seen that the serial time is always the fastest for each number of character counts. Time increases as the number of threads increases, with the largest increase at 16 threads. This likely stems from the fact that the serial program can simply read through the entire file in one pass and calculate as it goes. However, for 2, 4, 8, etc threads, each thread must perform extra file IO operations to determine its actual starting and ending point so it won't start or end in the middle of a word. Additionally, the more threads are spawned, the higher the thread creation overhead. The timing started right before the threads were created and stopped as soon as the threads were joined back to the main thread.