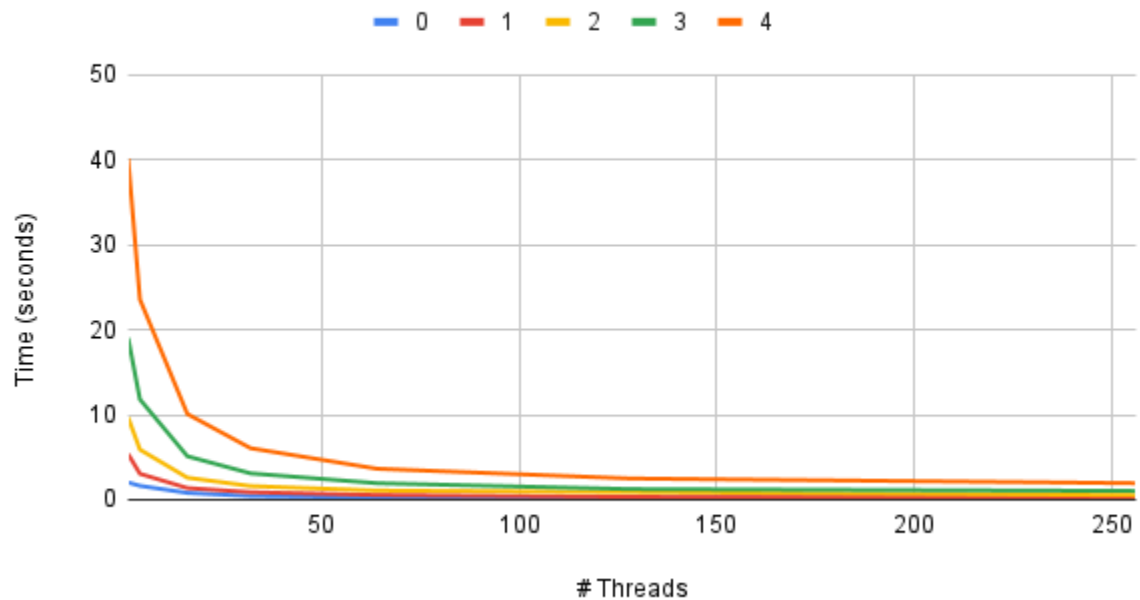


The experiment was conducted on a server with 48 Intel E5-2696 CPUs with clock speed 2.4 GHz via ssh connection. The program was run against 5 test cases of increasing size. Within each test case, we tested 7 different levels of threading: 1, 4, 16, 32, 64, 128, and 256 threads, and recorded the time taken to execute the program.

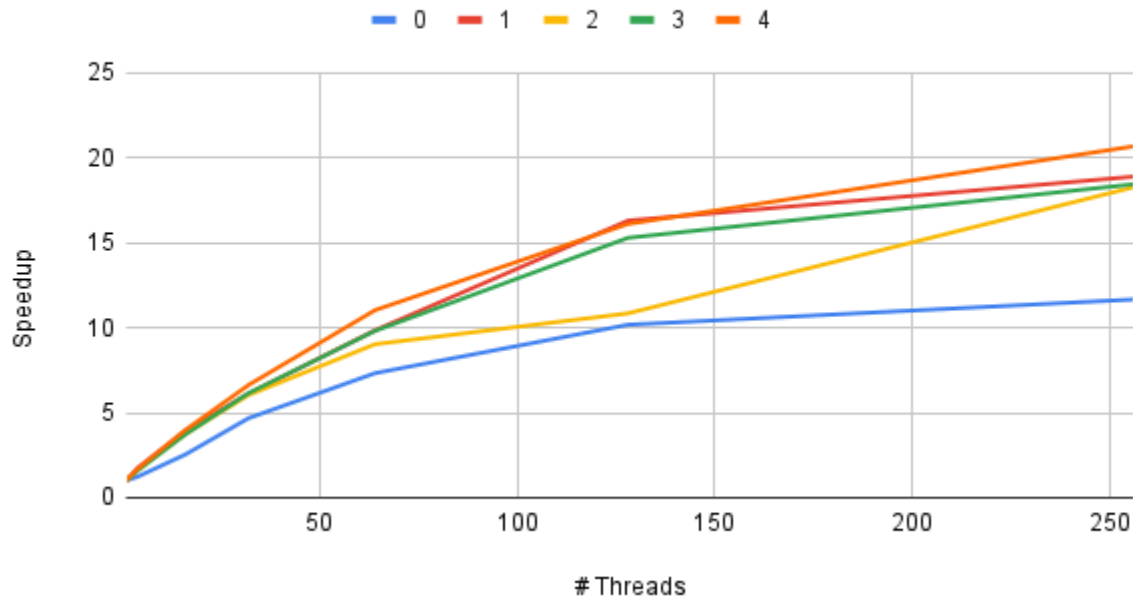
In the given test cases, the time taken to compute the hash value always decreases when the number of threads increases, with time being approximately proportional to $1/\log(n)$.

Time vs # Threads



The speed-up achieved when the number of threads increased was approximately 17 times more than when using a single thread, when using 256 threads to compute the hash.

Speedup vs # Threads



Theoretically, this level of speed-up may not be the case with sufficient threading, as the amount of cost of creating threads nears the amount of computation in each thread, however this was not observed in our experiment.