

My implementation (tok/s) on my own computer with different thread numbers and metrics are reported as follows:

Thread Numbers	Speed (tok/s)	User Time	System Time	Use Time / System Time
0 (Sequential)	68.835709	3.7117	0.1129	32.8759964570416
1 (1 (child) Thread)	62.015504	3.852150	0.165323	23.3007506517544
2	103.896104	4.044699	0.352562	11.4723055802951
4	148.233932	4.241969	0.552029	7.68432274391382
6	154.031288	4.511772	0.859334	5.2503124512704
8	147.720716	4.693867	1.278659	3.67092946594831
10	133.333333	5.025025	1.562201	3.21663153461046
12	127.744511	5.114079	1.706204	2.99734322507742
16	122.722915	5.070832	2.090148	2.42606360889277

The relation between various performance and no. of threads is illustrated as belows. It is noticable that the speed drops from using no thread to one thread since the system need extra time to create and manage the thread. The performance is improved straightly from using 2 threads to 4 threads since more threads are used to do calculations in parallel. The performance attains its peak at using 6 threads and the performance drops after then, since the overhead associated with creating and managing threads has increased, as shown by decreasing ratio between user times and system times.

