Investigation Report

The following table displays the performance of the single-core, two-core, and four-core versions of the table generator program. On a single machine.

Passwords Generated: 5399020

Processes	One core	Two core	Four core
Time for first run	25.01 seconds	23.04 seconds	21.13 seconds
Time for second run	23.99 seconds	21.79 seconds	22.20 seconds
Time for third run	22.64 seconds	21.85 seconds	21.60 seconds
Time for fourth run	23.19 seconds	22.35 seconds	21.41 seconds
Time for fifth run	22.06 seconds	21.91 seconds	20.67 seconds
Average time	23.37 seconds	22.18 seconds	21.40 seconds
Passwords per second	231,023.5	243,418.3	252,290.6

The following are the specifications of the test machine.

Processor: Intel(R) Core (TM) i3-8130U CPU @ 2.20GHz   2.21 GHz

Amount of RAM: 8.00 GB

Operating system: 64-bit

Disk type: Hard disk drive (HDD)

The test machine has 8GB RAM, which is better than 4GB, but the performance would have been better if it had 16GB or more. The test machine has HDD which has slower speed than SSD. It has an operating system of 64 bit which can handle more data at once than a 32 bit. It has an i3 processor but i5 or i7 will have better performance. Therefore, when it comes to performance based on the specifications of the test machine, the performance could be improved when the tests are run on a machine which has 16GB or more memory, SSD disk type and i5 or i7 processor.

The following are the results of cracking the passwords with crackfile.py using the hashes in shadow.txt