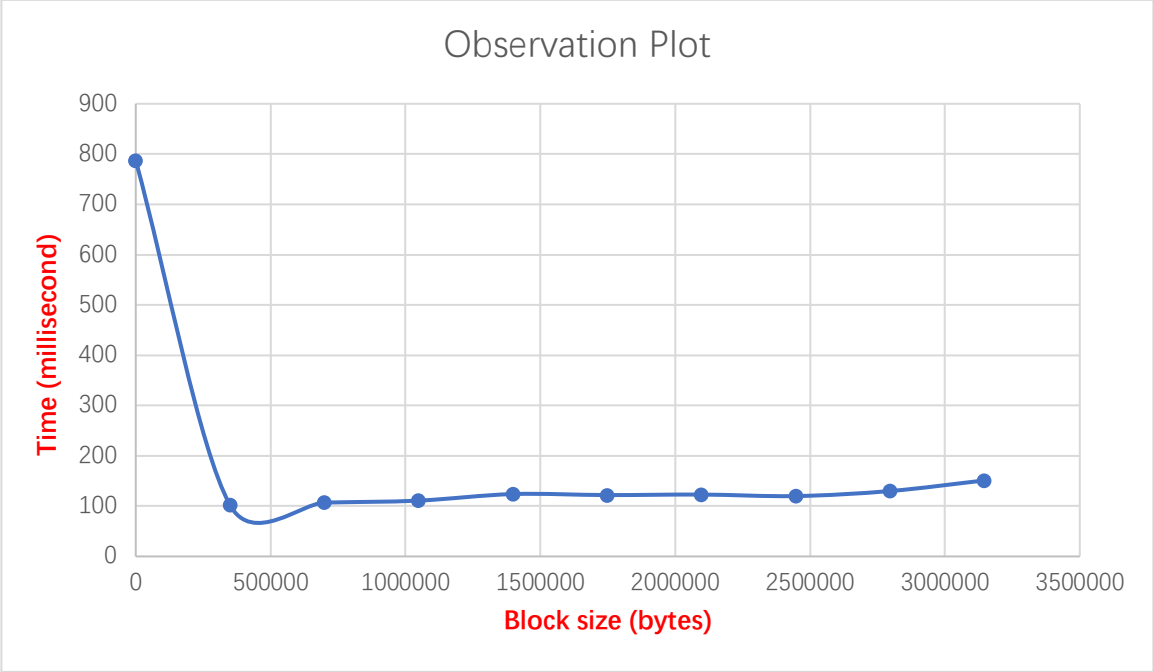
Report for part1.1: create_random_file:

Total bytes written: 10000000 Bytes
Script name: create_random_file.sh

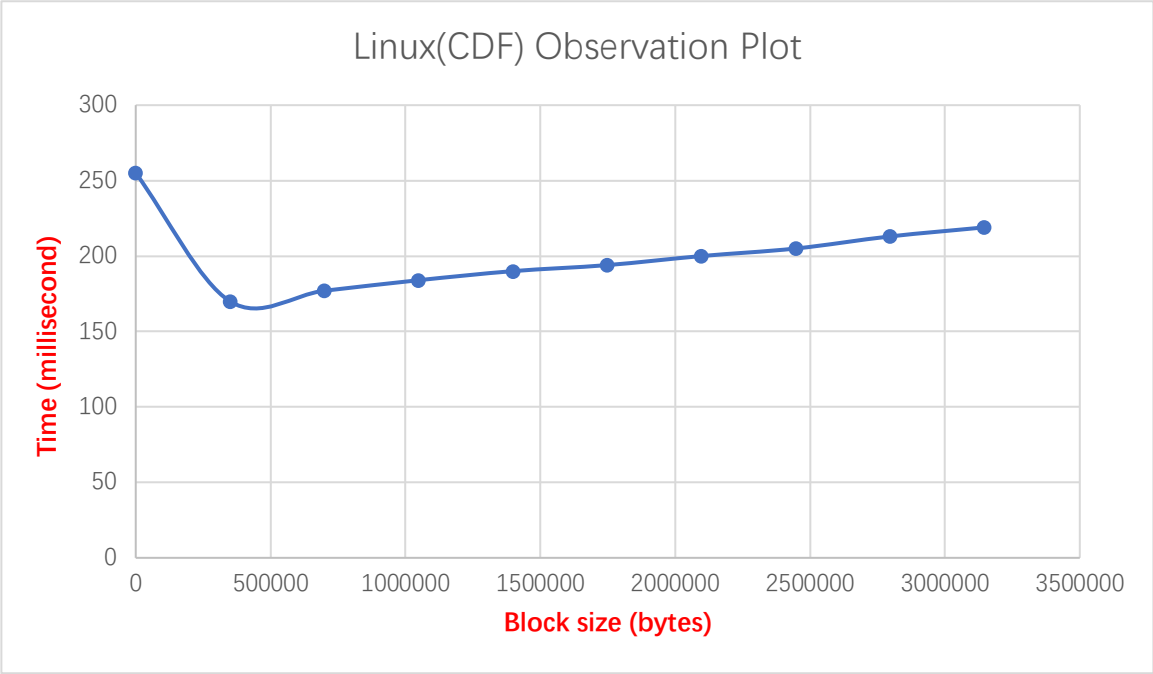
1)

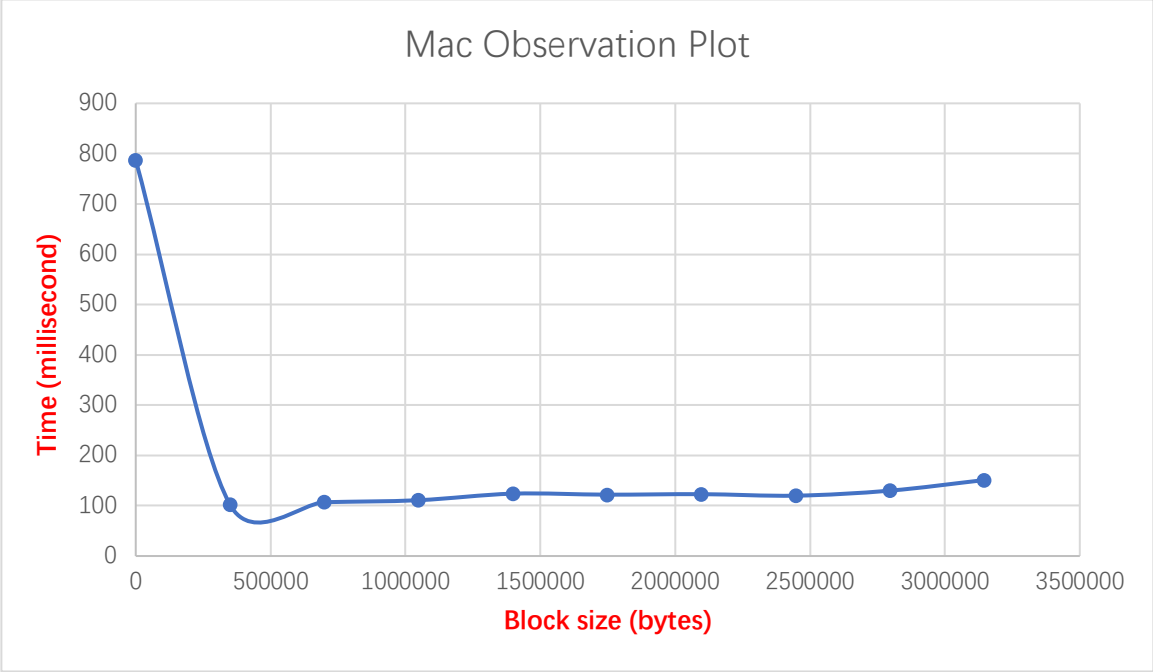


Simple explanation:
Small block size like 100B will have a longer time for writing because the buffer is refreshed more. If the block size getting bigger, the write time can increase as well since longer time will be taken to put the bytes inside the buffer.

2)
The optimal block size for write might depends on the types of disk, hard drive, etc. And, it can be affected by the total bytes needed to write as well. From the above experiment, 30kB is the optimal block size since it mostly takes the less time to finish the writing in a number of runs (total bytes ranging from 3000B – 1000000000B).

3)





Comparison:

In mac, block size of 100 takes much more time to finish the job. However, for other block sizes, mac machine seems to run faster and take less time for the run compared to linux machine in CDF. It can be caused by different hard disk. The optimal writing block size is still 30kb in both medium.