

# **CSC443 A1 Report**

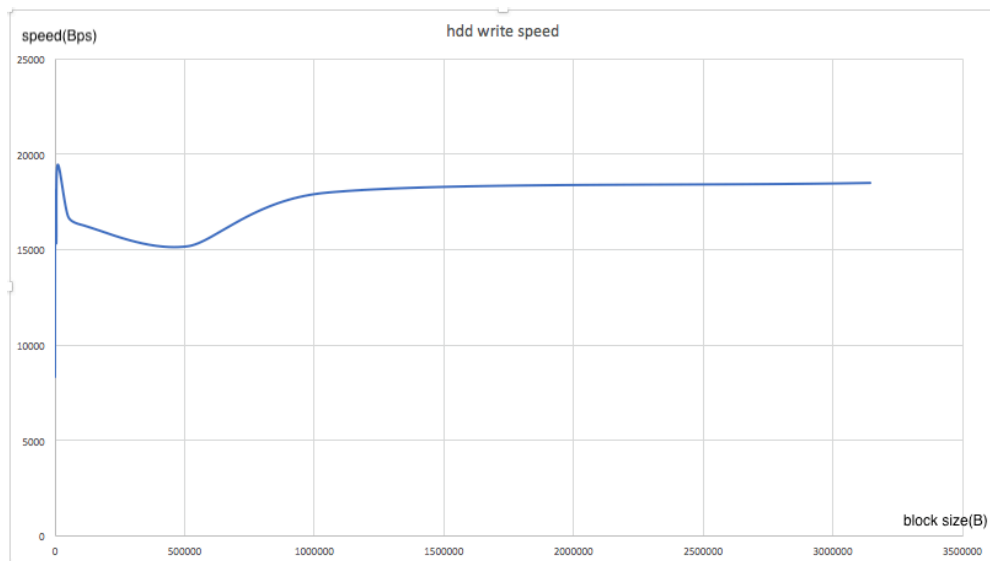
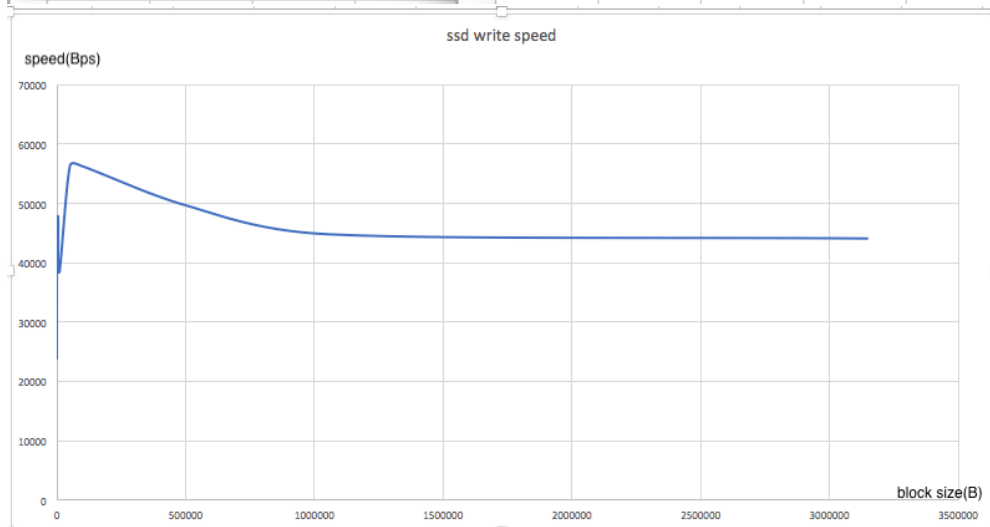
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## Sequential write to file

In this experiment, I measured the write data rate for 10 different block sizes: 100B, 500B, 1KB, 5KB, 10KB, 50KB, 100KB, 500KB, 1MB, 3MB and compared the write data rate between cdf's ssd and my laptop's hdd

the result and plots are as following

1	ssd write speed		1	hdd write speed	
2			2		
3	100 B	23901.36 Bps	3	100 B	8326.3 Bps
4	500 B	43690.67 Bps	4	500 B	17880.01 Bps
5	1024 B	45654.29 Bps	5	1024 B	15515.92 Bps
6	5120 B	47592.76 Bps	6	5120 B	15340.19 Bps
7	10240 B	38468.47 Bps	7	10240 B	19429.68 Bps
8	51200 B	56238.51 Bps	8	51200 B	16721.12 Bps
9	102400 B	56141.37 Bps	9	102400 B	16293.66 Bps
10	512000 B	49476.19 Bps	10	512000 B	15168.39 Bps
11	1048576 B	44773.91 Bps	11	1048576 B	17978.9 Bps
12	3145728 B	44045.88 Bps	12	3145728 B	18490.25 Bps



for ssd, the write data rate range from 23901.36 Bps to 56238.51 Bps, and the optimal block size is around 50KB-100KB

for hdd, the write data rate range from 8326.3 Bps to 19429.68 Bps, and the optimal block size is around 10KB

Ssd write data rate is generally faster than hdd.

## Sequential read from file

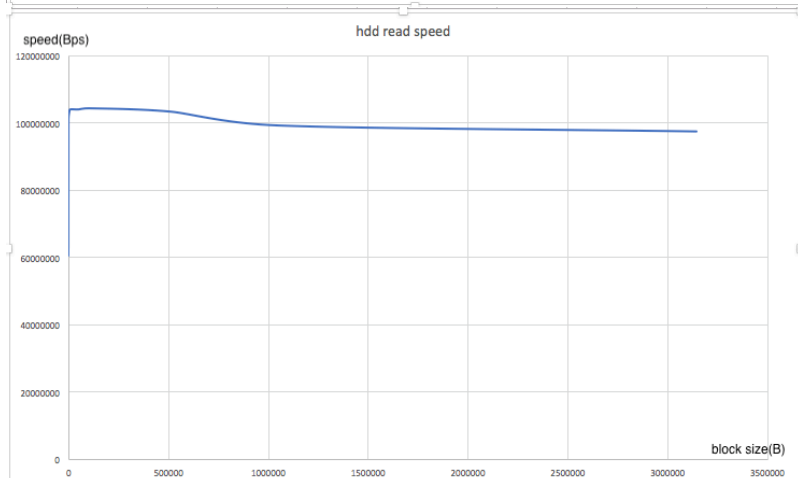
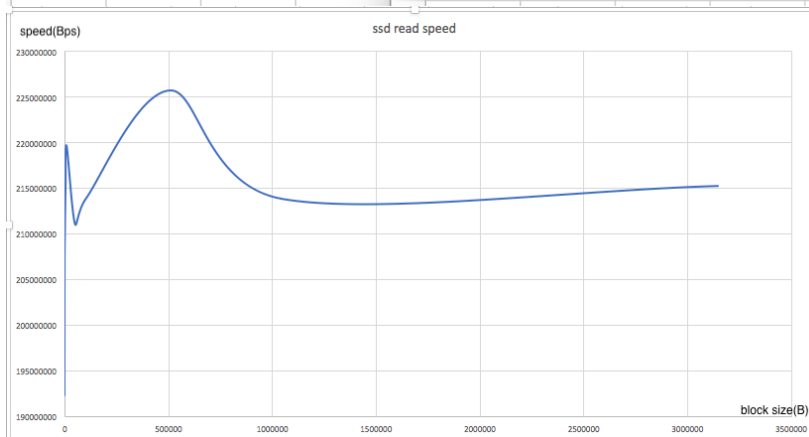
In this experiment, I measured the read data rate for 10 different block sizes:

100B, 500B, 1KB, 5KB, 10KB, 50KB, 100KB, 500KB, 1MB, 3MB

and compared the read data rate between cdf's ssd and my laptop's hdd

the result and plots are as following

ssd read speed		1	hdd read speed	
100 B	192342343 Bps	2	100 B	60532320.3 Bps
500 B	205733266 Bps	3	500 B	100326716 Bps
1024 B	208370872 Bps	4	1024 B	101580800 Bps
5120 B	215270570 Bps	5	5120 B	103193194 Bps
10240 B	219634162 Bps	6	10240 B	103852575 Bps
51200 B	211076987 Bps	7	51200 B	103852575 Bps
102400 B	213854316 Bps	8	102400 B	104185436 Bps
512000 B	225735111 Bps	9	512000 B	103193194 Bps
1048576 B	213854316 Bps	10	1048576 B	99103219.5 Bps
3145728 B	215270570 Bps	11	3145728 B	97322922.2 Bps
		12		



for ssd, the read data rate range from 192342343.2 Bps to 225735111.11 Bps, and the optimal block size is around 500KB

for hdd, the read data rate range from 60532320.3 Bps to 104185435.9 Bps, and there's no optimal block size.

Ssd read data rate is generally faster than hdd.