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Below are my tables with a short summary of my data and findings. For each table, I have highlighted in red the configurations that performed the worst, meaning their output was generally the lowest MB/s for all of the experiments. I highlighted in green the configurations I deemed best based on having the best and highest MB/s. For all tables and experiments, I took into consideration the numbers of both my own benchmark and iozone's. I tried to choose best and worst based on the two numbers, rather than the highest from one column. The throughput readings were done on 1 GB of data, while the latency readings were done on 4MB of data.

Table 1A:

Workload	Concurrency	Record Size	FileIO Measured Throughput (MB/sec)	IOZone Measured Throughput (MB/sec)
WS	1	64KB	415.37	274.66
WS	1	1MB	802.90	614.50
WS	1	16MB	782.91	713.49
WS	2	64KB	727.68	651.21
WS	2	1MB	848.54	713.52
WS	2	16MB	790.02	740.50
WS	4	64KB	743.61	685.36
WS	4	1MB	873.36	692.85
WS	4	16MB	855.55	797.43
WS	8	64KB	747.88	670.85
WS	8	1MB	844.31	807.12
WS	8	16MB	827.43	797.70

In table 1A, the performance of WS among difference concurrencies and record sizes seems to remain steady with little variation. We can see that the measured throughput was higher from my benchmark compared to iozone's. For both benchmarks, the performance does not improve and would likely not be suitable for bigger scale experiments. Introducing more, concurrent processes does not improve the performance, and neither does bigger record sizes. Running WS with 1 process and 64KB record sizes was by far the first performance, averaging close to 350 MB/s between my benchmark and iozone's. The best performing experiment was running WS with 8 concurrent processes, using 1MB record sizes because this configuration provided some of the highest MB/s readings between my benchmark and iozone's.

Table 1B:

Workload	Concurrency	Record Size	FileIO Measured Throughput (MB/sec)	IOZone Measured Throughput (MB/sec)
RS	1	64KB	715.94	924.12
RS	1	1MB	2,189.91	3,062.25
RS	1	16MB	1,907.73	2,623.56
RS	2	64KB	1,510.88	1,839.22
RS	2	1MB	2,362.04	3,816.77
RS	2	16MB	1,962.65	3,204.42
RS	4	64KB	1,429.93	1,983.95
RS	4	1MB	2,380.94	3,792.28
RS	4	16MB	2,059.94	3,215.36
RS	8	64KB	1,288.40	1,673.01
RS	8	1MB	2,226.69	2,122.05
RS	8	16MB	2,109.93	2,373.07

Table 1B shows the performance of RS, with there being a slight increase in throughput as more processes were added. My benchmark shows numbers generally between 1500 and 2000 MB/s for 1 and 2 process experiments. Once I increased to 4 and 8 processes, the throughput appeared to be within 2000-2500 MB/s. The iozone benchmarked showed generally steady numbers despite the number of processes. The slight increase I observed makes me feel as though this could scale because more processes could be used for bigger data. The worst performance I observed was running RS with 1 process and 64KB record sizes. These outputs were far lower than the rest, even less than half of the others. The best performance appeared to occur when running RS with 2 concurrent processes and 1MB record sizes. Between my benchmark and iozone's, these outputs seemed to be the highest.

Table 1C:

Workload	Concurrency	Record Size	FileIO Measured Throughput (MB/sec)	IOZone Measured Throughput (MB/sec)
WR	1	64KB	507.82	546.18
WR	1	1MB	731.41	964.59
WR	1	16MB	726.72	922.20
WR	2	64KB	696.37	899.39
WR	2	1MB	758.33	1,040.08
WR	2	16MB	732.70	908.23
WR	4	64KB	660.73	901.94
WR	4	1MB	867.58	1,105.68
WR	4	16MB	805.83	1,021.50
WR	8	64KB	663.50	796.60
WR	8	1MB	830.68	953.42
WR	8	16MB	925.57	797.36

Table 1C shows the experiments of running the WR workload. Most of my benchmark's outputs fell just below iozone's, but were still very close in value. My benchmark shows steady increases in performances; however, iozone's seems to waver around an average of 900 MB/s. This behavior is similar to RS in that it would likely be scalable, and that performance seems to increase with more concurrent processes. The worst performance I observed was when running WR with 1 process and 64KB record sizes, although it wasn't as significant of a difference as I have observed prior to this. The best performance I observed between the two benchmarks was with 4 concurrent processes and 1MB record sizes.

Table 1D:

Workload	Concurrency	Record Size	FileIO Measured Throughput (MB/sec)	IOZone Measured Throughput (MB/sec)
RR	1	64KB	697.51	880.88
RR	1	1MB	2,025.41	2,955.39
RR	1	16MB	1,791.78	2,642.67
RR	2	64KB	1,480.59	1,739.14
RR	2	1MB	2,342.91	3,534.58
RR	2	16MB	1,981.40	3,067.11
RR	4	64KB	1,865.07	2,179.32
RR	4	1MB	2,216.00	3,842.99
RR	4	16MB	2,064.97	3,206.57
RR	8	64KB	1,416.89	221.63
RR	8	1MB	2,087.10	1,630.81
RR	8	16MB	2,287.33	1,924.03

Table 1D shows the experiments for the RR workload. This showed no real trend in performance, with most of my own readings being between 1500-2300 MB/s and iozone's readings being between 1800-3800 MB/s, with an outlier of 220 MB/s. The performance in general is high compared to other workloads, so it is possible that this workload could scale for that reason. However, the lack of increase in performance with added processes may impede the scalability. The worst observed performance was again 1 process with 64KB record sizes. The best observed performance was also a repeat of 4 concurrent processes with 1MB record sizes, showing the best MB/s between my benchmark and iozone's.

Table 2A:

Workload	Concurrency	Record Size	FileIO Measured IOPS (OPS/sec)	IOZone Measured IOPS (OPS/sec)
WR	1	4KB	24,811.01	2,703.38
WR	2	4KB	25,503.09	14,358.05
WR	4	4KB	25,835.10	7,816.39
WR	8	4KB	20,625.36	19,831.31

Table 2A shows latency readings for the WR workload. For my benchmark and iozone, readings appear to be all over the place, showing no real trend. Also, my benchmark reported much higher latency than most of iozone's output, except for when 8 concurrent processes were used. The latency was generally best with a single process. I deemed the worst performance to be with 2 concurrent processes because both benchmarks had higher numbers. It could also be said that 8 concurrent processes provide the same performance, making it another contender for worst performance out of the 4 experiments.

Table 2B:

Workload	Concurrency	Record Size	FileIO Measured IOPS (OPS/sec)	IOZone Measured IOPS (OPS/sec)
RR	1	4KB	37,131.05	3,180.69
RR	2	4KB	47,964.78	4,592.35
RR	4	4KB	40,089.26	2,323.91
RR	8	4KB	19,539.65	2,312.96

Table 2B shows the latency readings of the RR workload. Again, there was a lack of a trend to both benchmarks' numbers. It could be said that there is a slight trend of decrease with added processes, with the single process experiment being an outlier. I have marked the best performance to be that of 8 processes because both benchmarks had their lowest latency with that experiment. The worst performance was observed in the 2 process experiment because the numbers were significantly higher than those of the rest of the experiments.