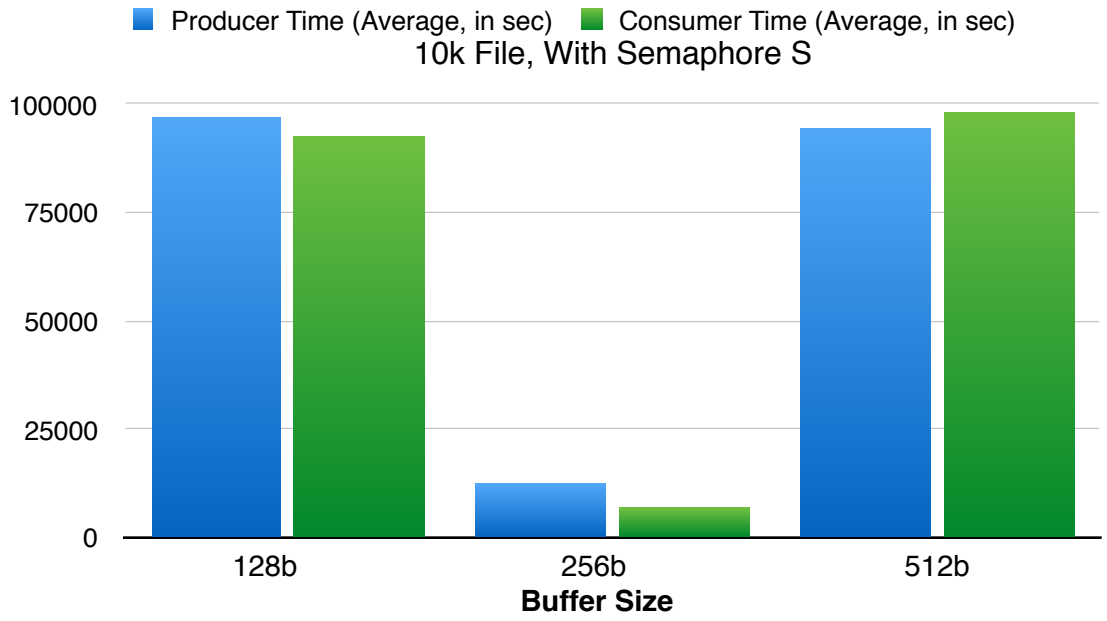

Figure 1: 10k File With Semaphore S

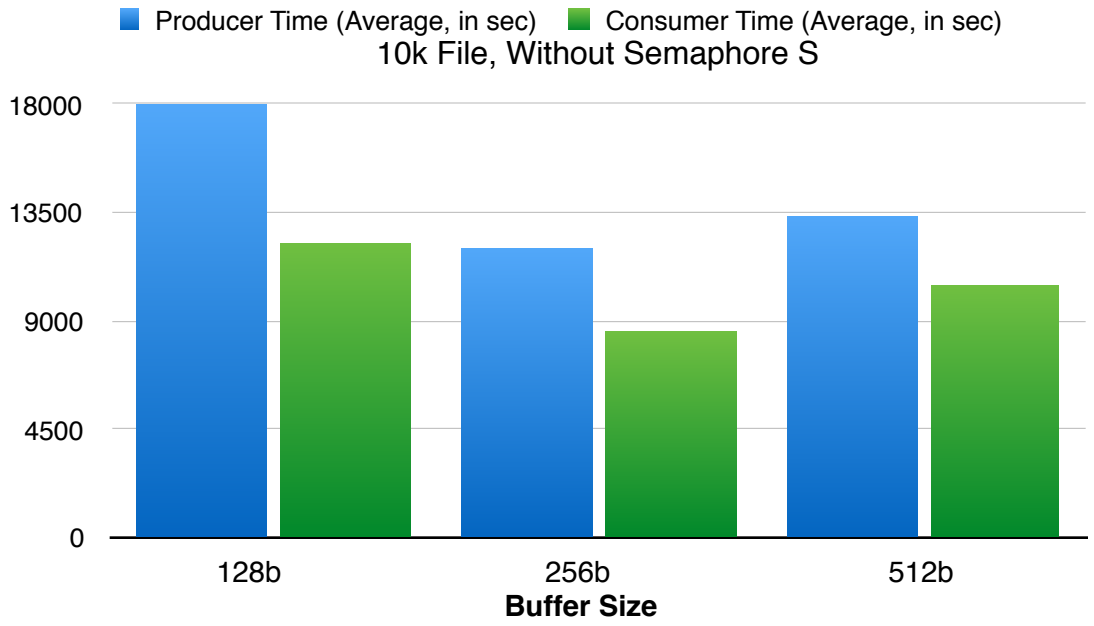

Figure 2: 10k File Without Semaphore S

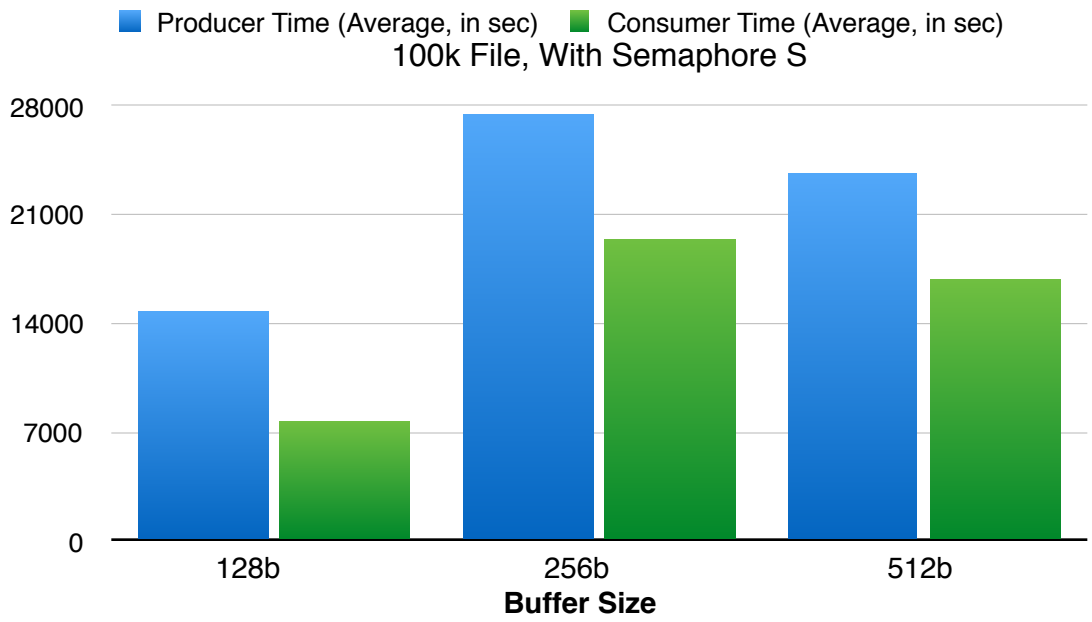

Figure 3: 100k File With Semaphore S

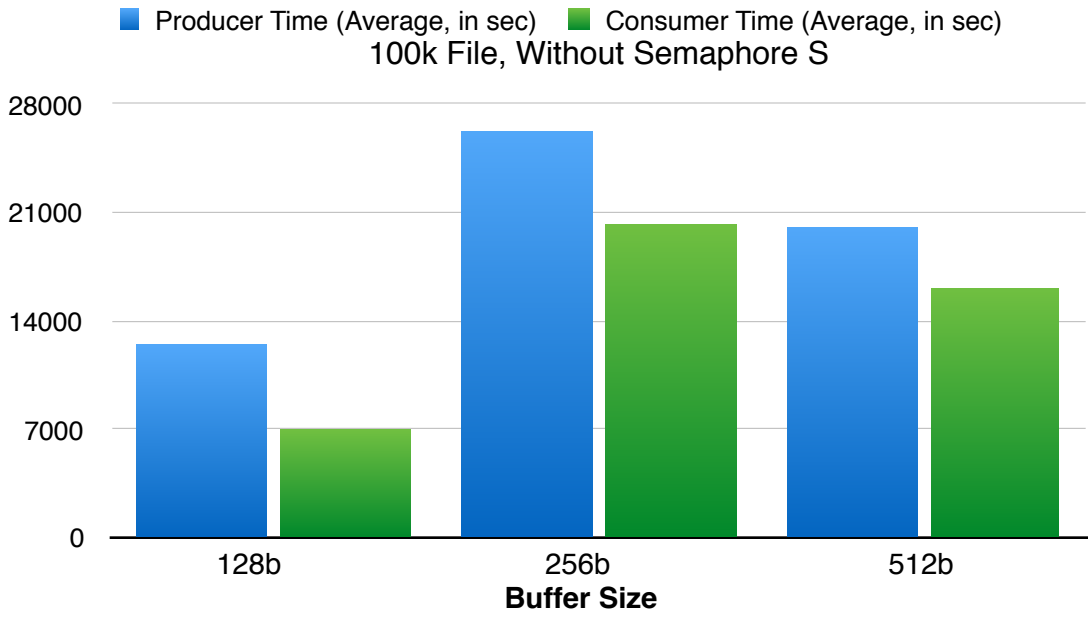

Figure 4: 100k File Without Semaphore S

Summary of Findings

The data acquired from measuring the completion time of the Producer and Consumer does not provide much insight into their performance. It appears that external system calls are resulting in significant variation in runtime. This resulting variation is apparent in Figure 1, as the 256b buffer size completion time is close to 10x faster than the 128b and 512b completion times.

It should be noted that larger file sizes (Figure 3 and Figure 4) result in a longer runtime. This was to be expected as the Producer and Consumer must read() and write() a substantial amount of data. An overview of the data may be found in Table 1.

Table 1: Producer/Consumer Completion Time with various Buffer Size, File Size, and Algorithm

Number of Buffers	Buffer Size	File Size	Algorithm	Producer Time (Average, in sec)	Consumer Time (Average, in sec)
10	128	10k	with S	96943.5	92862
10	256	10k	with S	12490	7395
10	512	10k	with S	94393	98034.5
10	128	100k	with S	14678.5	7657
10	256	100k	with S	27474.5	19352
10	512	100k	with S	23731.5	16778
10	128	10k	without S	17972.5	12246.25
10	256	10k	without S	12015.5	8590
10	512	10k	without S	13405	10449
10	128	100k	without S	12516.5	6953.5
10	256	100k	without S	26222.5	20326
10	512	100k	without S	20160	16110