1.

File Size (KB)	Execution Time (s)
0	0.1067
1	0.1113
10	0.1073
100	0.1115
512	0.145
1,024	0.1706 //smaller file test
1,024	0.1815 //larger file test
25,600	1.7646
51,200	3.4319
102,400	6.7031
153,600	10.2066
204,800	13.4961
256,000	16.3284
409,600	25.8524
512,000	33.2147
716,800	46.7355
1,024,000	68.2918

2.

this data matches what i expected. in very small file sizes, the overhead of creating pipes is majority of the time, and the file size does not matter much. It is luck of the draw how fast the operating system prioritizes your pipe creation.

as you get larger in file size, near 1/2 a MB, the file size outweighs the setup overhead by a lot and the trend becomes linear.

GRAPHS:

File Transfer Performance: Execution Time vs. File Size

File Transfer Performance: The Impact of Setup Overhead