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| --- | --- | --- | --- |
| Num of Processes | Time | Speedup | Efficiency |
| 1 | 165 | N/A | N/A |
| 2 | 91 | 1.81 | 0.90 |
| 4 | 55 | 3 | 0.75 |
| 8 | 34 | 4.8 | 0.60 |
| 16 | 32 | 5.16 | 0.32 |
| 32 | 34 | 4.8 | 0.15 |
| 64 | 53 | 3.11 | 0.05 |

The time and speedup that occurs when using more processes becomes faster up until around 8-16 processes where it begins to level off and then begin becoming slower. Although it continues to get faster up until about 16 processes, the most efficient use of processes is still at only 2 processes. What this code does is it takes the color picture and then uses a shared memory multithreading using vector threads to convert the image to grayscale. The function that converts the image is used between multiple threads to speed up the process.