## PS3b

## Pthreads

| num_of_threads | sha512,<br>1 simple<br>word | sha512,<br>4 digits | sha512, 2<br>alphanumeric<br>characters |
|----------------|-----------------------------|---------------------|-----------------------------------------|
| 1              | 17.877s                     | 47.028s             | 14.646                                  |
| 2              | 5.963s                      | 17.813s             | 5.783s                                  |
| 4              | 4.444s                      | 12.875s             | 4.337                                   |
| 6              | 3.708s                      | 10.776s             | 3.648s                                  |
| 8              | 3.086s                      | 8.691s              | 2.928s                                  |
| 10             | 3.497s                      | 9.770s              | 3.281s                                  |

## OpenMp

| num_of_threads | sha512,<br>1 word | sha512,<br>4 digits | sha512, 2<br>alphanumeric<br>characters |
|----------------|-------------------|---------------------|-----------------------------------------|
| 1              | 10.309s           | 30.235s             | 10.283s                                 |
| 2              | 5.199s            | 15.140s             | 5.101s                                  |
| 4              | 2.625s            | 7.630s              | 2.533s                                  |
| 6              | 3.385s            | 9.885s              | 3.324s                                  |
| 8              | 2.583s            | 7.430s              | 2.501s                                  |
| 10             | 3.695s            | 10.837s             | 3.661s                                  |

Overall the OpenMP solution is faster than the Pthreads solution. The difference in run-time is more significant when num\_of\_threads are small, and it evens out when num\_of\_threads increases. When num\_of\_threads exceeds 6 the results vary a bit, which suggests that the num\_of\_threads has exceeded the number of physical cores on the machine.