

Adriana Rios  
Kasie Kelldorf  
CS4380 Fall  
2016

## Project 3 Report - fractal\_pthread

As you can see the runtimes continue to decrease at 32 threads even though we're only working on 16 cores. The reason for this is that the work of a single thread does not use up an entire core.

Therefore, more threads can be added at once to one core.

30 frames of 250 x 250

threads	compute time
1	1.0337
2	1.034
4	0.55
8	0.2752
16	0.1725
32	0.1105

60 frames of 500 x 500

threads	compute time
1	2.0279
2	2.029
4	1.0112
8	0.5372
16	0.3264
32	0.2043

threads compute time

1	4.1152
2	4.1182
4	2.1913
8	1.0957
16	0.6651
32	0.4261

threads compute time

1	8.0962
2	8.1002
4	4.0369
8	2.1441
16	1.2027
32	0.8085

Efficiency:

# of threads	30 frames of 250 x 250	60 frames of 500 x 500	30 frames of 250 x 250	60 frames of 500 x 500
1	1.0025	0.9993	1.0057	0.9959
2	0.5011	1.9981	0.5026	1.9918
4	0.471	4.2652	0.4425	4.5395
8	0.4707	8.0344	0.4698	8.0504
16	0.3755	16.5772	0.3751	17.9744
32	0.2931	33.931	0.2861	35.0624

	30-250	60-250	30-500	60-500
	1.0363	2.0316	4.136	8.1095
1	1.00252	0.99931	1.00575	0.99592
2	0.50111	1.99812	0.50263	1.99180
4	0.47105	4.26519	0.44253	4.53948
8	0.47070	8.03443	0.46982	8.05036
16	0.37547	16.57722	0.37513	17.97442
32	0.29307	33.93100	0.28607	35.06240

## EFFICIENCY VS THREADS

