Project 5

Name: Venkat Vasantha Phani Sai Paramkusham

Class: CS_575

ONID:paramkuv

1. Tell what machine you ran this on?

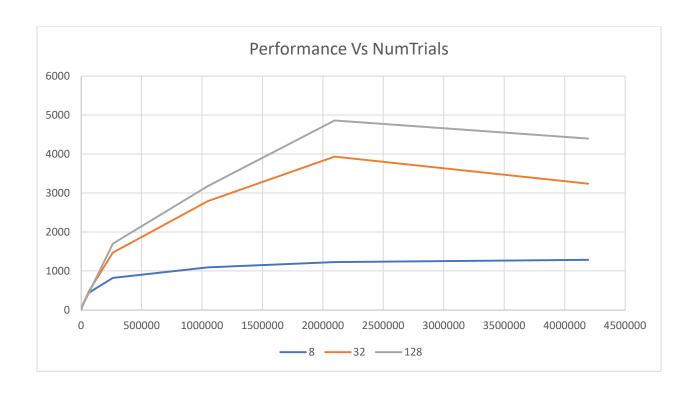Ans: rabbit
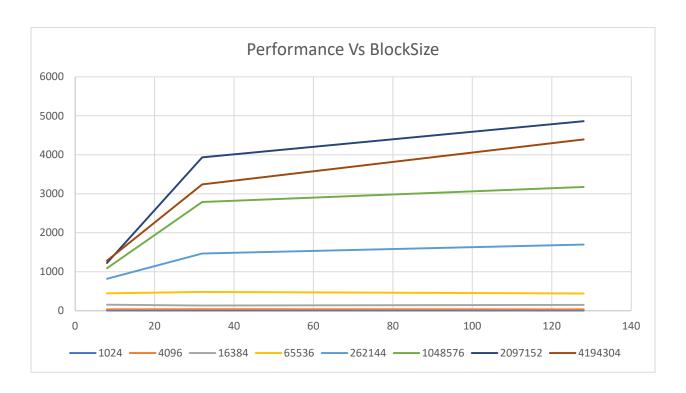
2. Show the table and the two graphs?

Ans:

NUMTRIALS	BLOCKSIZE	megaTrialsPerSecond	probability
1024	8	8.3792	28.81%
1024	32	10.7708	30.86%
1024	128	8.1301	30.57%
4096	8	36.9515	29.69%
4096	32	40.8946	29.37%
4096	128	37.5918	29.76%
16384	8	158.1711	29.26%
16384	32	136.3879	28.85%
16384	128	151.2109	29.25%
65536	8	445.411	29.16%
65536	32	486.1144	29.18%
65536	128	443.0982	29.06%
262144	8	821.665	29.04%
262144	32	1469.417	29.11%
262144	128	1699.233	29.05%
1048576	8	1091.212	29.14%
1048576	32	2789.953	29.17%
1048576	128	3176.425	29.15%
2097152	8	1229.015	29.10%
2097152	32	3933.969	29.07%
2097152	128	4863.164	29.10%
4194304	8	1287.418	29.12%
4194304	32	3239.385	29.08%

4194304	128	4395.292	29.10%

Performance Vs NumTrials

Performance Vs BlockSize

3. What patterns are you seeing in the performance curves?

Ans:

Performance Vs Number of Tries

This graph performance is increasing with the increase in the number of tries until 2000000 after that suddenly the performance of 32 and 128 threads was the decreasing. In an ideal scenario, the graph needs to be increased but I feel this decrease has occurred due to the excess load on the rabbit server.

Performance Vs Block size

This graph performance is increasing with the increase in the number of block sizes except for the 8 threads because the 8th performance is less than the performance of the 7 threads.

4. Why do you think the patterns look this way?

Ans:

Performance Vs Number of Tries

In an ideal scenario, the graph needs to be increased with the increase in the number of trials, but I feel this decrease has occurred due to the excess load on the rabbit server.

Performance Vs Block size

This graph performance is increasing with the block size and number of threads but the 8 threads' performance is less than the performance of 7 threads because of the wrap.

5. Why is a BLOCKSIZE of 8 so much worse than the others?

Ans: Because of wrap we must use 32 threads but here we are using 8 threads which is like an underperforming which is causing this lack of performance.

6. How do these performance results compare with what you got in Project #1? Why?

Ans:

In project1 we are using the CPU threads whereas in project 5 we are using the GPU Cuda which resulted in a decrease in the performance to the increase in threads in project5. But in project 5 performance is increase with the increase in block size.

Project1 is achieving the probability of project#1 at 29.10 % as an average probability of performance whereas project#5 is having a probability of 22.4%

7. What does this mean for the proper use of GPU parallel computing?

Ans:

The proper use of the GPU parallel computing is done by the following

- Proper usage of multithreading
- Best usage of Cuda architecture
- Effective utilization of multiprocessor environment
- Wrap of thread performance
- Steam processing into multiple datasets.