

# Pthread Matrix Multiplication Runtime

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# 1 Introduction

## Report Content

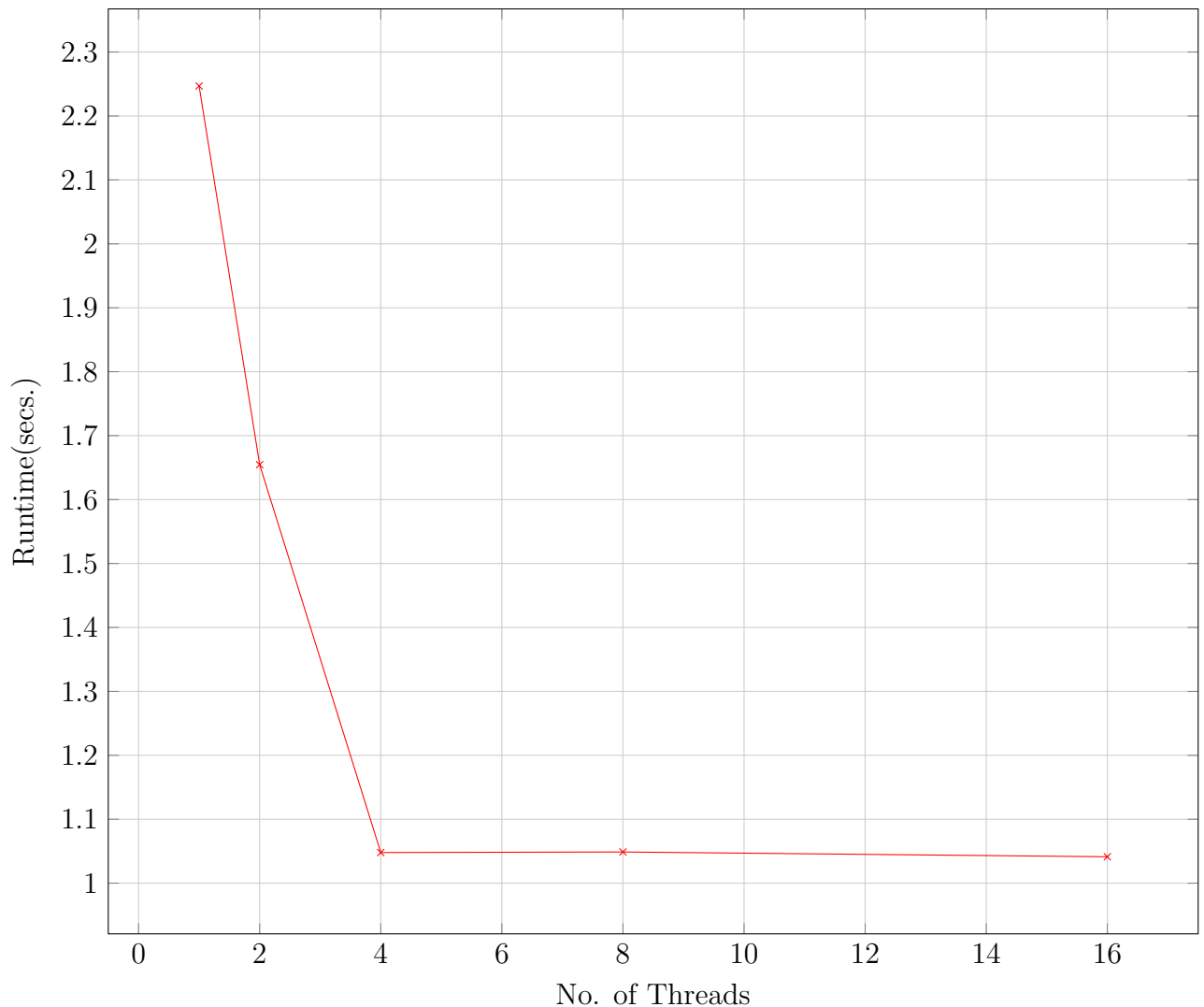
This report contains performance graph for matrix multiplication using pthreads. Runtime is measured for several thread amounts by keeping matrix size as fixed.

## Testcases Details

No. of Threads	1 2 4 8 16
No. of iterations	10
Fixed Matrix Size	512

## 2 CPU Pthread Program runtime

This program is executed in CPU using **POSIX threads** and  $x, y$  values are extracted from the average runtime of each different threads count.



—x— *PThreadsCPU*

- There is good performance gain when the program is using multiple threads rather than single thread.
- When the threads amount is exceeding the actual parallel threads of the CPU runtime plot has random peaks and wells and when threads amount is equal to actual parallel threads of CPU it has very good performance.

### 3 References

- <https://www.tug.org/twg/mactex/tutorials/ltxprimer-1.0.pdf>.
- <https://gist.github.com/LeCoupa/122b12050f5fb267e75f>
- <https://tex.stackexchange.com/questions>
- <https://computing.llnl.gov/tutorials/pthreads>
- <https://randu.org/tutorials/threads>