POSIX Threads- Project Assignment II

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Measurement Report:

Time	**Sequential Version of Gaussian Elimination**
User	24.53 seconds
System	0.05 seconds
Elapsed	24.71 seconds
CPU Usage	99%

Time	**Parallel Version of Gaussian Elimination**	
No. of CPUs	**1 CPU**	**8 CPU**
User	24.00 seconds	46.85 seconds
System	0.03 seconds	0.20 seconds
Elapsed	24.04 seconds	0:6.24 seconds
CPU Usage	100%	753%

It is evident that the time consumed by the sequential execution is greater than that of the parallel counter-parts. Further, it can also be observed that the difference is approximately 20seconds. Also, the execution time of the program on 8 CPUs is less than that of the execution time on 1CPU/thread. It can also be noted that the sequential execution time and the time taken to execute on 1 thread involves same amount of time. Therefore, efficiency enhances when Gaussian elimination is executed on 8 CPUs

Commands for compiling and executing:

The local machine has to be connected to kraken server in order to execute the program. It can be reached through PuTTY and the host address is kraken.tek.bth.se.

Parallel Gaussian Elimination using pthreads (One/8 CPU/thread):

Switching the NUMOFCORES within the declaration in the code with 1 and 8. Meaning, if the program has to be executed on 1 CPU/thread then NUMOFCORES is 1 and if the program has to be executed on 8 CPUs then the NUMOFCORES is 8

Compile with gcc -pthread -o gauss1 gausspar1.c where gausspar1 is the file name.

Finding the execution time can be done through /usr/bin/time ./gauss1