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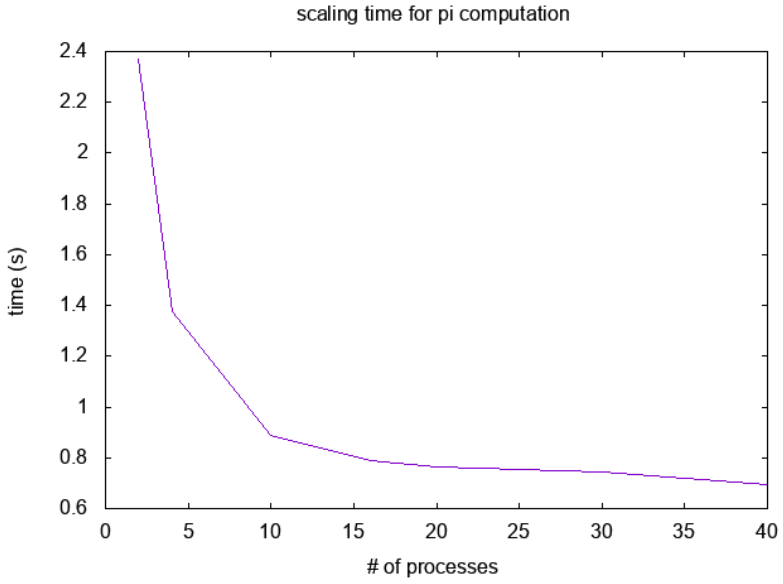
Exercise 1,Parallel Computing course.

Computing pi using OpenMPI

The aim of the exercise is to compute π using midpoints rule in a OpenMPI approach. The computation is done using the same algorithm as in OpenMP, collecting the processes results using "MPI_Reduce" function into the last process available.
The final result is then sent from the last process to the first one using "MPI_Send" and "MPI_Recv", and finally printed.
Time of execution is calculated for different number of processes in order to underlining the gain in performance. The result is represented in the following graph.



Compiling and Executing exercises

The first step on Ulysses is to reserve two nodes for the execution:
qsub -l nodes=2:ppn=20 -I -l walltime=1:00:00.

Then compiling using:
module load openmpi
mpicc *mpi_p.c* -o *mpi_p*

Finally executing using the script in the current folder:
./cases.sh