Assignment 1 FHPC 2021

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1 Section 1: MPI programming

1.1 Ring

This code is done in c. I singled out master rank=0 among all other processors to compute the time elapsed to go through the loop. I could use all the time of all the processors and then take the average, however to measure the average could also use a processor timing to avoid that I used a single processor, in this case processor with rank zero for all numbers of processors, starting from 2-36. I used the Cineca-marconi login node for this problem as the orfeo was busy that time. I use a bash to mutilple run the code for better result and take the average. I execute the code with the bash for 10 times, and took the average for timing, and plot the result with python.

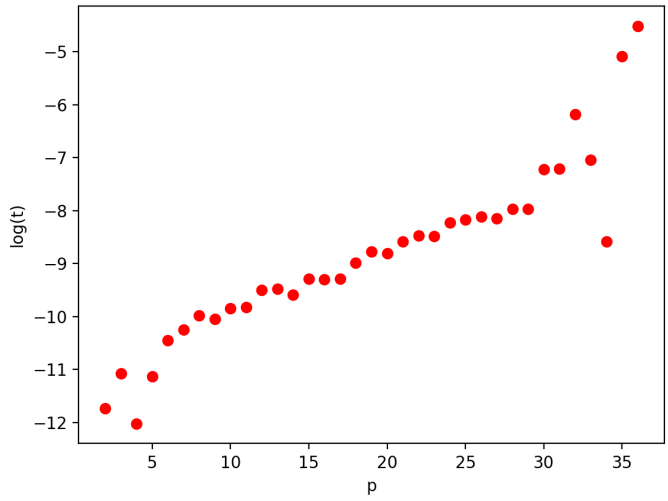

Figure 1: Ring

1.2 Matrix addition in parallel using different topology

This code is done in cpp.

2 Section 2: Measure MPI point to point performance

3 Section 3: Compare performance observed against performance model for Jacobi solver