

4 Task 4

(For completeness) Analogous settings (iterations, processes, etc...) to Task 2, the program was executed on the cluster this time using 2D decomposition, the speedup and the efficiency are shown in figures 7 and 8. While the 2D decomposition does not influence the accuracy (the results were compared to the serial/the 1D decomposition) the runtime was generally longer for the 2D decomposition. Also the speedup achieved with a higher number of processors was smaller this is most likely due to the additional communication which was not done in an optimized manner.

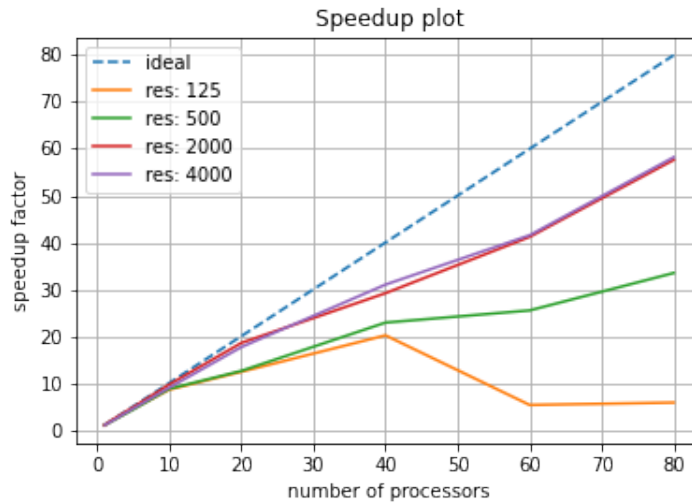


Figure 7: Speedup for different resolutions dependent on the number of processes.

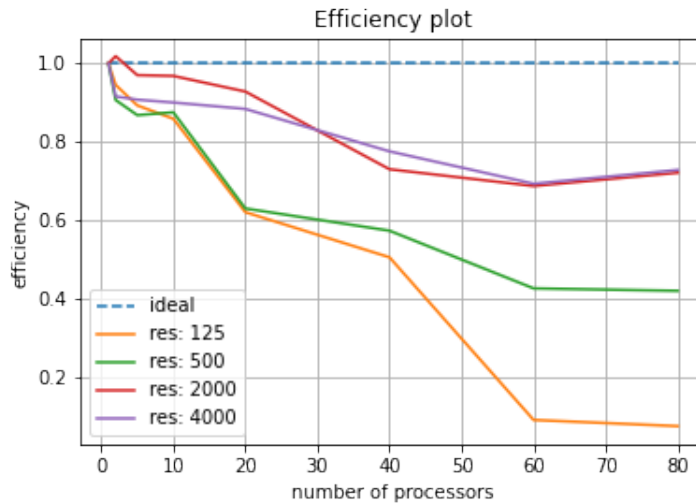


Figure 8: Efficiency for different resolutions dependent on the number of processes.

References

- [1] (2019) Xeon gold 6248 - intel. [Online]. Available:
<https://en.wikichip.org/wiki/intel/xeon_gold/6248>