

CS633:Assignment2

Performance Analysis of Halo Exchange Function(with and without leaders)

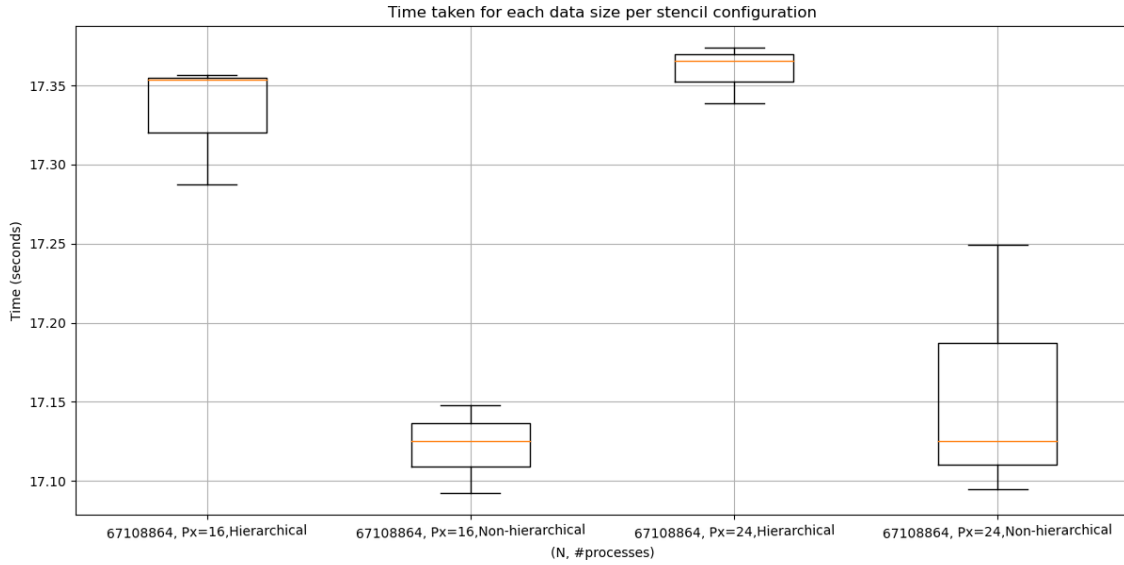
GROUP 25

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1 Performance Observations

From the boxplot of timings, the following observations can be made regarding the performance of the halo exchange function:

- We can see that the hierarchical implementation of halo exchange is turning out to be slightly slower than the non-hierarchical implementation, for both number of processes.
- Going through the code, we see that intra-node gather statements and left-right halo exchanges are running synchronously. This reduces the benefit of hierarchical implementation.
- If we increase P_x or number of nodes, then we may observe faster performance in our hierarchical implementation since there would be more internode communications in the non-hierarchical implementation as compared to our implementation.
- The non-hierarchical approach takes less time with 24 processes compared to 16, possibly due to varying congestion levels on nodes in each run.



2 Group Information

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