CSE5441 Lab5

Result:

PC_t00100
the producer time is 3.400000 seconds
the consumer time is 3.480000 seconds
message transformation time is 21.200000 seconds
real 0m7.424s
user 0m35.581s
sys 0m0.659s

PC_t01000
the producer time is 31.190000 seconds
the consumer time is 31.320000 seconds
message transformation time is 256.870000 seconds
real 1m5.603s
user 5m24.221s
sys 0m2.597s

PC_t05000
the producer time is 165.650000 seconds
the consumer time is 165.330000 seconds
message transformation time is 1598.090000 seconds
real 5m45.288s
user 28m14.633s
sys 0m22.838s

Analysis:

For this task, I just implemented a hierarchical parallel consumer and producer program with OpenMP and MVAPICH2. As shown above, the wall-clock time is around five times of real run time. This result seems to be reasonable due to the fact that I utilized 5 nodes for computation. Besides, the producer and consumer both used similar run time which is around half of real run time. What's more, compared with previous serial version code, this MPI version is much faster.

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