CSCI 515, Autumn 2018
Assignment # 2

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For this experiment, we used the Western Washington University cluster, specifically machine node 0. This system has two sockets, twelve cores, four cache levels (2 of which are 32 KB and private, 1 of which is 256 KB and private, and the last is 15 MB and public). In addition, memory is 31 GB.

When executing the producer consumer program, the total number of messages increased as the number of processes increased up to 12 processes. This is because each process was able to execute on its own core. Hence there wasn't much context switching, and more work was done. When 16 processes were used, there was actually less work done, since the CPU's had to perform context switches and the number of producers and consumers executing simultaneously could have been uneven. When executing our work pool program, the performance was similar for the same reasons, however it plateaued once we got to 16 processes. This may be the case because, producer consumer requires quite a bit of synchronization between processes, while work pool doesn't require as much. Hence, context switching did not affect our work pool program as much.