HW 2 – Problem 5

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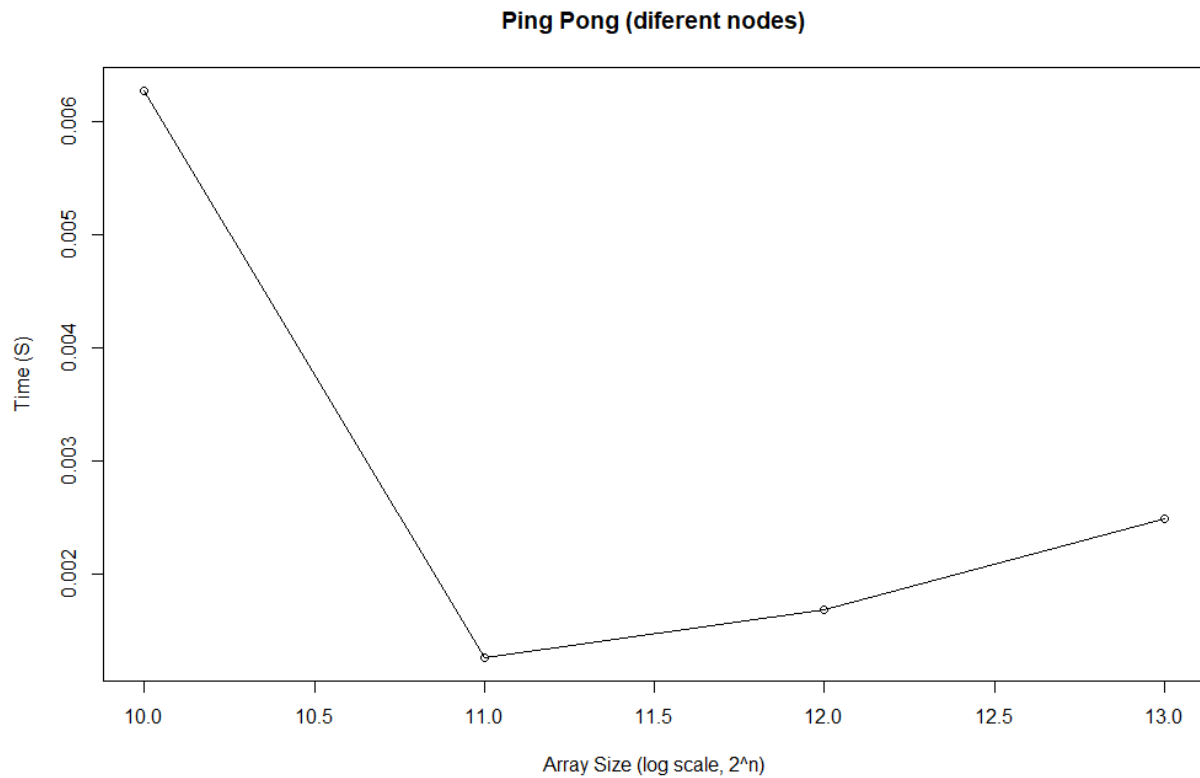
will0101

Results:

Array Size	2^10	2^11	2^12	2^13
Time (same node)	0.000451	0.000669	0.001222	0.002218
Time (different node)	0.006278	0.001243	0.001626	0.002397

Graphs:

Ping Pong (same node)

Ping Pong (diferent nodes)
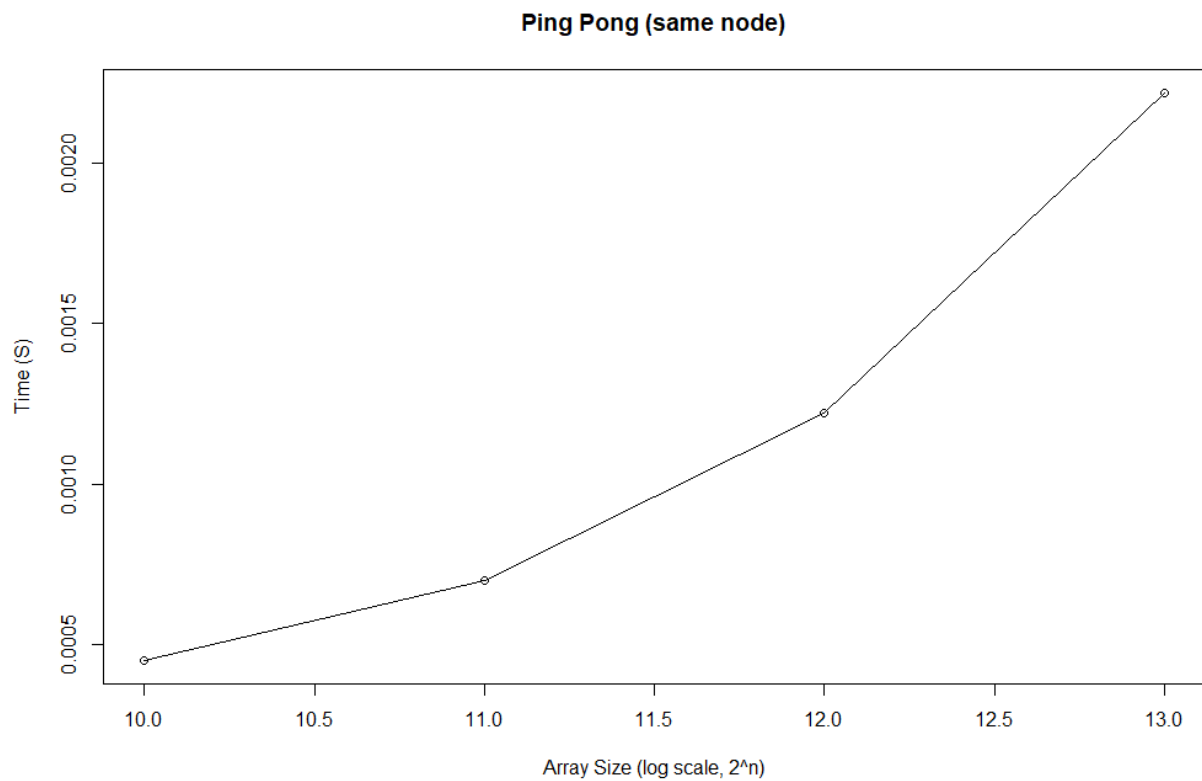
The different nodes graph is interesting and is likely due to some internal optimizer that gives priority to inter-node communication when the message size is above a certain limit.

In homework 1, the average response time was 0.001 seconds for intra-node performance (UDP over localhost), and 0.1366 seconds for inter-node performance (UDP over the internet). This is much worse than MPI's 0.000451 seconds for intra-node and 0.006278 for inter-node performance. Additionally, the MPI program is passing 2^{10} integers 100 times, while the UDP program is only passing 1 integer 3 times. This means that the RTT for the MPI program is (roughly) 0.00000451 and 0.00006278seconds, respectively, far outperforming UDP.