

High Performance Computing

Homework #6

Due: Tuesday April 26 2016 by 11:59 PM

Email-based help Cutoff: 5:00 PM on Mon, April 25 2016

Points: 5

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Experimental Platform

The experiments documented in this report were conducted on the following platform:

<i>Component</i>	<i>Details</i>
CPU Model	Intel Xeon X5550
CPU/Core Speed	2.67GHz
Main Memory (RAM) size	24725392 kB
Operating system used	Linux mualhpcp01.hpc.muohio.edu 2.6.32-279.14.1.el6.x86_64 #1 SMP Tue Nov 6 23:43:09 UTC 2012 x86_64 x86_64 x86_64 GNU/Linux
Interconnect type & speed (if applicable)	Not applicable
Was machine dedicated to task (yes/no)	Yes (via a qsub job)
Name and version of C++ compiler (if used)	icpc 15.0.0, compatible g++ 4.9.2
Name and version of Java compiler (if used)	None
Name and version of other non-standard software tools & components (if used)	None

Runtime statistics

The runtime statistics show in the adjacent table was collected on a varying number of compute nodes using `numbers_1000.txt`. The data from just one run is shown (even though normally Avg±CI from 5 runs would be reported). **Note:** Prior to collecting the data I verified that the output from programs are correct.

I used `numbers_10000.txt` as there was no `numbers_1000.txt` file in the copied directory.

Nodes Used	Elapsed time (seconds)
2	13.16
4	4.69
6	2.88
8	2.27

Inferences & Discussions

Now, using the data from the above table discuss if your solution is providing good performance improvements as the number of processes/nodes is increased

Using the data above, it is clear the program is able to take advantage of additional compute power. Although the jump from 6 to 8 nodes doesn't return as much of a performance gain as the leap from 2 to 4 nodes, there were still improvements at every stage.