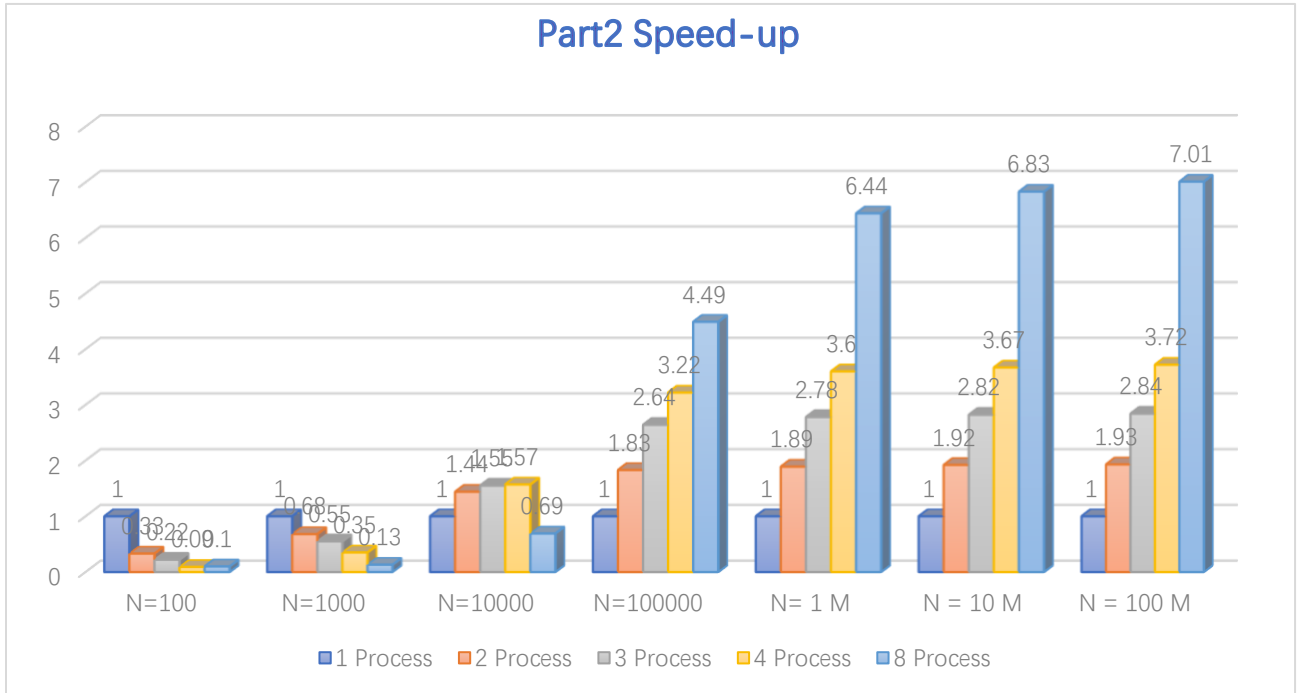


Parallel Computing

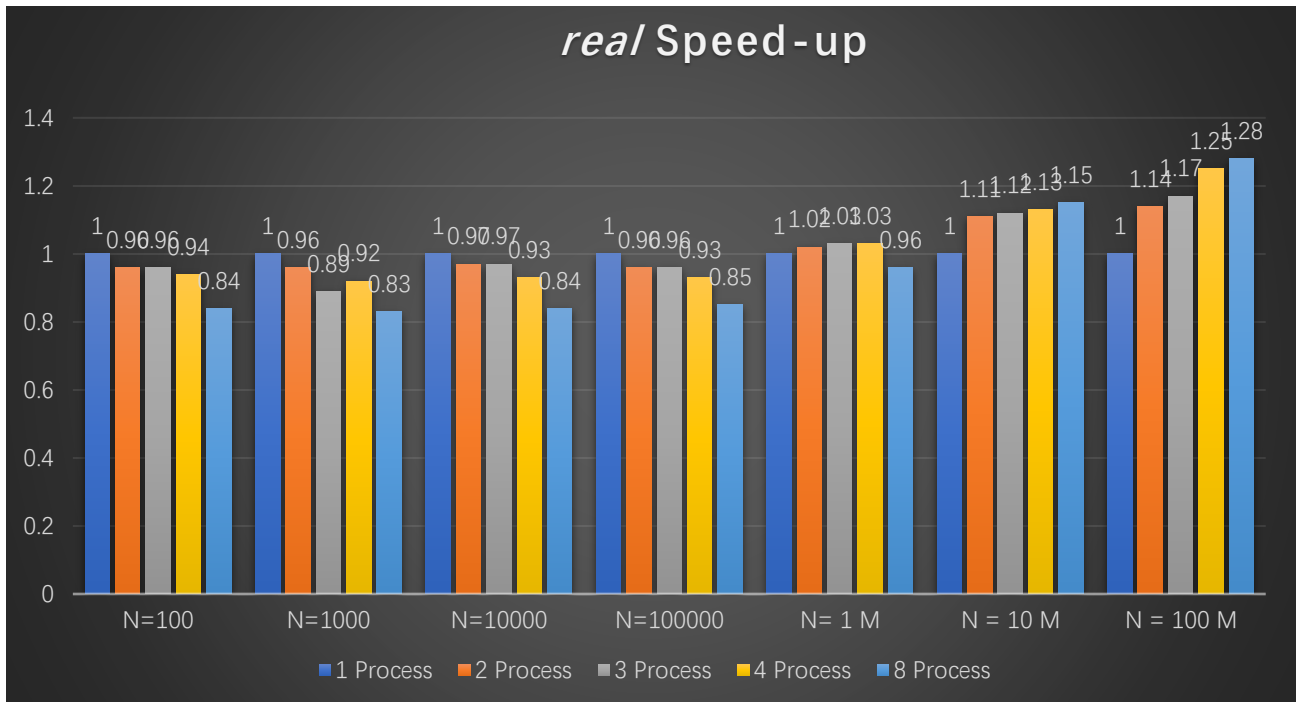
Lab1 Report

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Part2 Speed-up



real Speed-up



Notice: All the data graphs drawn above are created by taking an average of 3 experiments. Namely for each run-time data point, I run it three times on crunchy3 and record it then take its average. The detailed data table is provided below for easy reference.

a=3, b=5, c=11	N=100	N=1000	N=10000	N=100000	N=1 M	N = 10M	N=100M
refcheckdiv	0/0/0 0.004/0.004/0.004	0/0/0 0.004/0.003/0.004	0/0/0 0/012/0.006/0.005	0/0/0 0.025/0.018/0.018	0.03/0.03/0.03 0.164/0.160/0.160	0.37/0.37/0.37 1.661/1.694/1.673	4.04/4.02/4.03 16.459/16.436/16.684
Mpi 1p	0.000019/0.000017/0.000017 0.314/0.305/0.304	0.000048/0.000047/0.00047 0.308/0.302/0.303	0.000377/0.000361/0.000363 0.306/0.306/0.318	0.003825/0.003805/0.003813 0.323/0.328/0.320	0.04083/0.04080/0.040938 0.503/0.490/0.486	0.43951/0.4394/0.44098 2.244/2.256/2.237	4.74725/4.739105/4.72571 20.089/20.385/19.923
Mpi 2p	0.000054/0.000048/0.000059 0.321/0.321/0.320	0.000064/0.000068/0.00077 0.316/0.320/0.316	0.000242/0.000260/0.000261 0.324/0.319/0.319	0.002119/0.002063/0.002071 0.346/0.335/0.333	0.021546/0.021652/0.021656 0.487/0.481/0.479	0.22941/0.22892/0.22926 2.04/2.034/2.026	2.45507/2.45044/2.44645 18.046/17.321/17.676
Mpi 3p	0.000096/0.000082/0.000064 0.320/0.320/0.319	0.000104/0.000067/0.00087 0.392/0.320/0.319	0.000242/0.000213/0.000254 0.324/0.319/0.319	0.00145/0.001432/0.01445 0.336/0.333/0.346	0.014724/0.014748/0.014709 0.486/0.473/0.475	0.15603/0.15561/0.15646 2.042/1.988/1.964	1.67326/1.66316/1.66835 17.381/17.352/17.063
Mpi 4p	0.000219/0.000170/0.000177 0.329/0.324/0.328	0.000121/0.000141/0.00139 0.340/0.327/0.322	0.000228/0.000228/0.00245 0.337/0.328/0.332	0.001207/0.001189/0.001156 0.358/0.340/0.345	0.01133/0.01130/0.01138 0.48/0.476/0.479	0.11986/0.11987/0.11937 1.996/2.001/1.989	1.27451/1.27887/1.270943 16.36/15.476/16.488
Mpi 8p	0.000184/0.000185/0.000144 0.363/0.365/0.369	0.000267/0.000277/0.000524 0.372/0.363/0.366	0.000625/0.000560/0.000399 0.376/0.361/0.373	0.000841/0.000875/0.000831 0.384/0.382/0.373	0.00623/0.00632/0.00648 0.522/0.510/0.510	0.06433/0.06438/0.06443 1.937/1.934/1.963	0.67863/0.67799/0.67865 15.684/16.116/15.455