

Serial

-N = 5, delta_t = 25000 T = 75000

Start computing n-body solver

Final positions and velocities

position of particle 0 is (1.49589e+11,2.23498e+09)

velocity of particle 0 is (-444.783,29797.8)

position of particle 1 is (2.27895e+11,1.8075e+09)

velocity of particle 1 is (-191.663,24099.5)

position of particle 2 is (5.78258e+10,3.59199e+09)

velocity of particle 2 is (-2967,47838.7)

position of particle 3 is (99.3001,0.281964)

velocity of particle 3 is (0.0039715,3.38301e-05)

position of particle 4 is (1.08179e+11,2.62494e+09)

velocity of particle 4 is (-850.162,34993.1)

Time in seconds: 0.000145912

-N = 5, delta_t = 25000 T = 50000

Start computing n-body solver

Final positions and velocities

position of particle 0 is (1.49596e+11,1.49e+09)

velocity of particle 0 is (-296.53,29799.3)

position of particle 1 is (2.27898e+11,1.205e+09)

velocity of particle 1 is (-127.776,24099.8)

position of particle 2 is (5.78753e+10,2.395e+09)

velocity of particle 2 is (-1978.92,47879.5)

position of particle 3 is (33.1016,0)

velocity of particle 3 is (0.00264794,1.12786e-05)

position of particle 4 is (1.08193e+11,1.75e+09)

velocity of particle 4 is (-566.815,34997.7)

Time in seconds: 0.000159979

-N = 5, delta_t = 25000 T = 25000

Start computing n-body solver

Final positions and velocities

position of particle 0 is (1.496e+11,7.45e+08)

velocity of particle 0 is (-148.268,29800)

position of particle 1 is (2.279e+11,6.025e+08)

velocity of particle 1 is (-63.8884,24100)

position of particle 2 is (5.79e+10,1.1975e+09)

velocity of particle 2 is (-989.776,47900)

position of particle 3 is (0,0)
velocity of particle 3 is (0.00132406,0)
position of particle 4 is (1.082e+11,8.75e+08)
velocity of particle 4 is (-283.421,35000)

Time in seconds: 0.000163078

Parallel with CUDA

-bash-4.1\$./main 5 25000 75000 0 1 ./nbody_data/planets.txt

Start computing n-body solver

Computing starts with...

Block Size: 1

of Blocks : 5

Final positions and velocities

position of particle 0 is (1.49589e+11,2.23498e+09)

velocity of particle 0 is (-444.783,29797.8)

position of particle 1 is (2.27895e+11,1.8075e+09)

velocity of particle 1 is (-191.663,24099.5)

position of particle 2 is (5.78258e+10,3.59199e+09)

velocity of particle 2 is (-2967,47838.7)

position of particle 3 is (99.3001,0.281964)

velocity of particle 3 is (0.0039715,3.38301e-05)

position of particle 4 is (1.08179e+11,2.62494e+09)

velocity of particle 4 is (-850.162,34993.1)

Time in seconds: 0.000145

Gflops Rate: 0.010348 GFlop/s

Bandwidth Rate : 99338.778947 GB/s

-bash-4.1\$./main 5 25000 50000 0 1 ./nbody_data/planets.txt

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Computing starts with...

Block Size: 1

of Blocks : 5

Final positions and velocities

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velocity of particle 2 is (-1978.92,47879.5)

position of particle 3 is (33.1016,0)

velocity of particle 3 is (0.00264794,1.12786e-05)

position of particle 4 is (1.08193e+11,1.75e+09)

velocity of particle 4 is (-566.815,34997.7)

Time in seconds: 0.000106

Gflops Rate: 0.009425 GFlop/s

Bandwidth Rate : 90483.861573 GB/s

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Computing starts with...

Block Size: 1

of Blocks : 5

Final positions and velocities

position of particle 0 is (1.496e+11,7.45e+08)

velocity of particle 0 is (-148.268,29800)

position of particle 1 is (2.279e+11,6.025e+08)

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position of particle 2 is (5.79e+10,1.1975e+09)

velocity of particle 2 is (-989.776,47900)

position of particle 3 is (0,0)

velocity of particle 3 is (0.00132406,0)

position of particle 4 is (1.082e+11,8.75e+08)

velocity of particle 4 is (-283.421,35000)

Time in seconds: 0.000074

Gflops Rate: 0.006765 GFlop/s

Bandwidth Rate : 64944.061935 GB/s