

1. Performance Benchmark:

cant: The running time of my code for 50 iterations is: 279.059 milliseconds.
consph: The running time of my code for 20 iterations is: 163.506 milliseconds.
cop20k_A: The running time of my code for 73 iterations is: 249.963 milliseconds.
dense2: The running time of my code for 10 iterations is: 104.191 milliseconds.
jonheart: The running time of my code for 60 iterations is: 4.39174 milliseconds.
mac_econ_fwd500: The running time of my code for 12 iterations is: 22.4801 milliseconds.
mc2depi: The running time of my code for 70 iterations is: 251.274 milliseconds.
pdb1HYS: The running time of my code for 30 iterations is: 194.271 milliseconds.
pwtk: The running time of my code for 25 iterations is: 391.587 milliseconds.
qcd5_4: The running time of my code for 63 iterations is: 161.19 milliseconds.
rail4284: The running time of my code for 10 iterations is: 231.153 milliseconds.
rma10: The running time of my code for 74 iterations is: 242.566 milliseconds.
scircuit: The running time of my code for 30 iterations is: 45.849 milliseconds.
shipsec1: The running time of my code for 10 iterations is: 106.683 milliseconds.
webbase-1M: The running time of my code for 77 iterations is: 431.985 milliseconds.

2. Correctness Test:

I used reference_spMVscan-released.cu to do the testing, and I passed the requirement. See the following log.

```
[dbtsai@node014 aux]$ ./a.out
```

Root directory for data files: /home/dbtsai/benchmarksuite/

Reading data in directory: cant

Parameters read from file:

n (size of a) = 4007383, p (number of segments) = 62450, q (size of x) = 740737

Number of iterations set to: N = 3

CPU took 120 ms

File: absolute l2/linf - relative l2/linf 3.7e+00 5.2e-02 1.4e-06 9.3e-07

Reading data in directory: consph

Parameters read from file:

n (size of a) = 6010480, p (number of segments) = 83333, q (size of x) = 214464

Number of iterations set to: N = 3

CPU took 130 ms

File: absolute l2/linf - relative l2/linf 5.2e+02 7.8e+00 1.4e-06 8.6e-07

Reading data in directory: cop20k_A

Parameters read from file:

n (size of a) = 2624331, p (number of segments) = 121191, q (size of x) = 104806

Number of iterations set to: N = 3

CPU took 60 ms

File: absolute l2/linf - relative l2/linf 6.6e-01 5.8e-02 1.3e-06 2.0e-06

Reading data in directory: dense2

Parameters read from file:

n (size of a) = 4000000, p (number of segments) = 1999, q (size of x) = 618114

Number of iterations set to: N = 3

CPU took 110 ms

File: absolute l2/linf - relative l2/linf 1.7e+02 6.0e+00 1.9e-06 5.6e-06

Reading data in directory: jonheart

Parameters read from file:

n (size of a) = 37035, p (number of segments) = 3128, q (size of x) = 684279

Number of iterations set to: N = 3

CPU took 0 ms

File: absolute l2/linf - relative l2/linf 2.1e-02 4.2e-03 1.3e-06 2.0e-06

Reading data in directory: mac_econ_fwd500

Parameters read from file:

n (size of a) = 1273389, p (number of segments) = 206499, q (size of x) = 759983

Number of iterations set to: N = 3

CPU took 50 ms

File: absolute l2/linf - relative l2/linf 3.7e+01 4.9e+00 1.4e-06 1.4e-06

Reading data in directory: mc2depi

Parameters read from file:

n (size of a) = 2100225, p (number of segments) = 525824, q (size of x) = 10765

Number of iterations set to: N = 3

CPU took 40 ms

File: absolute l2/linf - relative l2/linf 8.9e+00 5.1e-01 1.3e-06 2.3e-06

Reading data in directory: pdb1HYS

Parameters read from file:

n (size of a) = 4344765, p (number of segments) = 36416, q (size of x) = 426573

Number of iterations set to: N = 3

CPU took 100 ms

File: absolute l2/linf - relative l2/linf 1.7e+01 6.2e-01 1.3e-06 1.7e-06

Reading data in directory: pwtk

Parameters read from file:

n (size of a) = 11634424, p (number of segments) = 217917, q (size of x) = 281408

Number of iterations set to: N = 3

CPU took 250 ms

File: absolute l2/linf - relative l2/linf 1.6e+05 6.1e+03 1.4e-06 1.4e-06

Reading data in directory: qcd5_4

Parameters read from file:

n (size of a) = 1916928, p (number of segments) = 49151, q (size of x) = 17216

Number of iterations set to: N = 3

CPU took 40 ms

File: absolute l2/linf - relative l2/linf 2.3e-01 5.9e-03 1.4e-06 1.6e-06

Reading data in directory: rail4284

Parameters read from file:

n (size of a) = 11279748, p (number of segments) = 4283, q (size of x) = 560567

Number of iterations set to: N = 3

CPU took 270 ms

File: absolute l2/linf - relative l2/linf 7.0e+02 1.3e+01 2.5e-06 5.5e-06

Reading data in directory: rma10

Parameters read from file:

n (size of a) = 2374001, p (number of segments) = 46834, q (size of x) = 802446

Number of iterations set to: N = 3

CPU took 80 ms

File: absolute l2/linf - relative l2/linf 3.8e-01 9.5e-03 1.4e-06 1.6e-06

Reading data in directory: scircuit

Parameters read from file:

n (size of a) = 958936, p (number of segments) = 170997, q (size of x) = 321417

Number of iterations set to: N = 3

CPU took 20 ms

File: absolute l2/linf - relative l2/linf 8.4e-01 5.2e-02 1.3e-06 5.2e-07

Reading data in directory: shipsec1

Parameters read from file:

n (size of a) = 7813404, p (number of segments) = 140873, q (size of x) = 693767

Number of iterations set to: N = 3

CPU took 230 ms

File: absolute l2/linf - relative l2/linf 2.5e+10 6.4e+08 1.3e-06 6.3e-07

Reading data in directory: webbase-1M

Parameters read from file:

n (size of a) = 3105536, p (number of segments) = 1000004, q (size of x) = 223734

Number of iterations set to: N = 3

CPU took 90 ms

File: absolute l2/linf - relative l2/linf 3.3e-03 3.4e-04 1.3e-06 3.3e-06