



SPEC[®] CFP2006 Result

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IBM Corporation

SPECfp[®]_rate2006 = 59.0

IBM System x iDataPlex dx340 (Intel Xeon X5260)

SPECfp_rate_base2006 = 55.2

CPU2006 license: 11

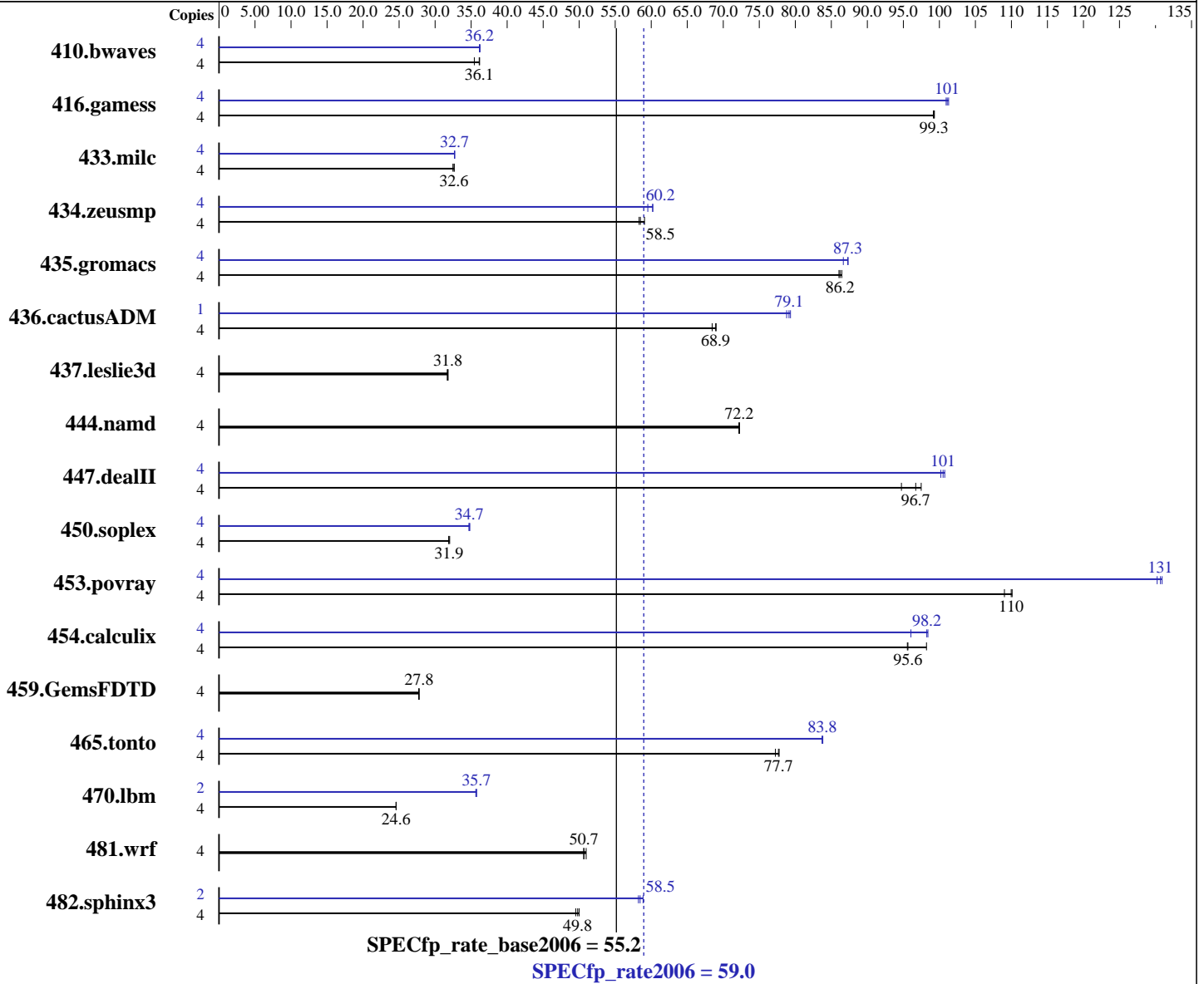
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Oct-2008

Hardware Availability: Oct-2008

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon X5260
 CPU Characteristics: 1333MHz system bus
 CPU MHz: 3333
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip

Continued on next page

Software

Operating System: SuSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042, l_fproc_b_11.0.042
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

Continued on next page



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L3 Cache: None
Other Cache: None
Memory: 16 GB (4 x 4 GB DDR2-5300F ECC)
Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|------------|-------------|-------------|-------------|-------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | 1534 | 35.4 | 1503 | 36.2 | 1505 | 36.1 | 4 | 1500 | 36.2 | 1504 | 36.2 | 1503 | 36.2 |
| 416.gamess | 4 | 789 | 99.3 | 789 | 99.3 | 790 | 99.2 | 4 | 776 | 101 | 773 | 101 | 775 | 101 |
| 433.milc | 4 | 1131 | 32.5 | 1125 | 32.6 | 1125 | 32.6 | 4 | 1123 | 32.7 | 1123 | 32.7 | 1123 | 32.7 |
| 434.zeusmp | 4 | 622 | 58.5 | 624 | 58.3 | 616 | 59.1 | 4 | 605 | 60.2 | 612 | 59.5 | 604 | 60.2 |
| 435.gromacs | 4 | 332 | 86.1 | 331 | 86.2 | 330 | 86.5 | 4 | 327 | 87.3 | 330 | 86.7 | 327 | 87.3 |
| 436.cactusADM | 4 | 698 | 68.5 | 693 | 68.9 | 693 | 69.0 | 1 | 151 | 79.1 | 151 | 79.3 | 152 | 78.8 |
| 437.leslie3d | 4 | 1187 | 31.7 | 1184 | 31.8 | 1183 | 31.8 | 4 | 1187 | 31.7 | 1184 | 31.8 | 1183 | 31.8 |
| 444.namd | 4 | 444 | 72.2 | 444 | 72.3 | 444 | 72.2 | 4 | 444 | 72.2 | 444 | 72.3 | 444 | 72.2 |
| 447.dealII | 4 | 483 | 94.7 | 469 | 97.5 | 473 | 96.7 | 4 | 454 | 101 | 457 | 100 | 455 | 101 |
| 450.soplex | 4 | 1042 | 32.0 | 1045 | 31.9 | 1046 | 31.9 | 4 | 961 | 34.7 | 958 | 34.8 | 961 | 34.7 |
| 453.povray | 4 | 193 | 110 | 194 | 110 | 195 | 109 | 4 | 163 | 131 | 163 | 131 | 163 | 130 |
| 454.calculix | 4 | 336 | 98.2 | 345 | 95.6 | 345 | 95.6 | 4 | 335 | 98.4 | 344 | 96.0 | 336 | 98.2 |
| 459.GemsFDTD | 4 | 1528 | 27.8 | 1528 | 27.8 | 1531 | 27.7 | 4 | 1528 | 27.8 | 1528 | 27.8 | 1531 | 27.7 |
| 465.tonto | 4 | 507 | 77.7 | 506 | 77.8 | 510 | 77.2 | 4 | 470 | 83.7 | 470 | 83.8 | 470 | 83.8 |
| 470.lbm | 4 | 2237 | 24.6 | 2235 | 24.6 | 2234 | 24.6 | 2 | 771 | 35.6 | 769 | 35.7 | 769 | 35.8 |
| 481.wrf | 4 | 882 | 50.7 | 883 | 50.6 | 877 | 51.0 | 4 | 882 | 50.7 | 883 | 50.6 | 877 | 51.0 |
| 482.sphinx3 | 4 | 1566 | 49.8 | 1574 | 49.5 | 1560 | 50.0 | 2 | 670 | 58.2 | 662 | 58.9 | 667 | 58.5 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.
taskset was used to bind processes to cores except for 436.cactusADM peak

General Notes

OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to null
Hardware Prefetch Enabled and Adjacent Sector Prefetch Enabled
Memory configuration set to "Performance Optimized"
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run



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Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch



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Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias

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Peak Optimization Flags (Continued)

470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
-auto-ilp32

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: basepeak = yes

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -ansi-alias
-scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -opt-prefetch -parallel
-auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes



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The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.17.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.17.xml>

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