



SPEC[®] CFP2006 Result

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IBM Corporation

SPECfp[®]_rate2006 = 53.5

IBM System x3250 M2 (Intel Xeon X3370)

SPECfp_rate_base2006 = 49.9

CPU2006 license: 11

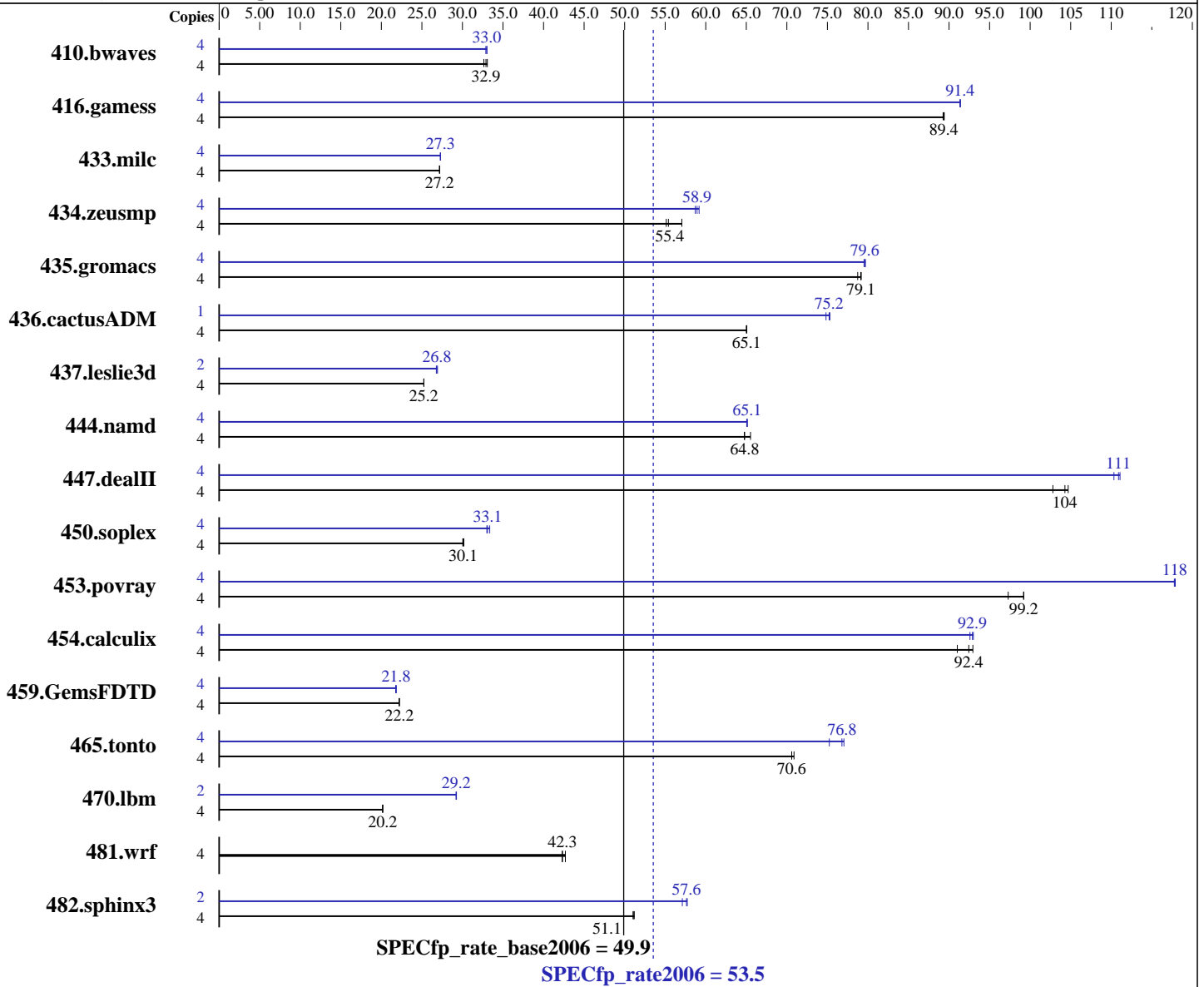
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Apr-2009

Hardware Availability: Jun-2009

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon X3370
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

Software

Operating System: SuSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: l_cproc_p_11.0.066, l_cprof_p_11.0.066
 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: 8 GB (4 x 2 GB PC2-6400E 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	1665	32.6	1644	33.1	<u>1652</u>	<u>32.9</u>	4	1653	32.9	<u>1647</u>	<u>33.0</u>	1646	33.0
416.gamess	4	<u>876</u>	<u>89.4</u>	876	89.4	877	89.3	4	857	91.4	857	91.4	<u>857</u>	<u>91.4</u>
433.milc	4	1351	27.2	1351	27.2	<u>1351</u>	<u>27.2</u>	4	1346	27.3	1345	27.3	<u>1346</u>	<u>27.3</u>
434.zeusmp	4	638	57.0	660	55.1	<u>657</u>	<u>55.4</u>	4	<u>618</u>	<u>58.9</u>	615	59.2	620	58.7
435.gromacs	4	<u>361</u>	<u>79.1</u>	363	78.7	361	79.2	4	<u>359</u>	<u>79.6</u>	358	79.7	359	79.5
436.cactusADM	4	735	65.0	735	65.1	<u>735</u>	<u>65.1</u>	1	159	75.3	<u>159</u>	<u>75.2</u>	160	74.8
437.leslie3d	4	<u>1489</u>	<u>25.2</u>	1490	25.2	1489	25.2	2	<u>701</u>	<u>26.8</u>	702	26.8	698	26.9
444.namd	4	495	64.8	<u>495</u>	<u>64.8</u>	490	65.5	4	<u>493</u>	<u>65.1</u>	493	65.1	493	65.0
447.dealII	4	<u>439</u>	<u>104</u>	437	105	445	103	4	<u>413</u>	<u>111</u>	412	111	415	110
450.soplex	4	1110	30.0	<u>1108</u>	<u>30.1</u>	1106	30.2	4	1011	33.0	<u>1008</u>	<u>33.1</u>	1000	33.4
453.povray	4	219	97.3	214	99.2	<u>215</u>	<u>99.2</u>	4	181	118	180	118	<u>181</u>	<u>118</u>
454.calculix	4	355	92.9	363	91.0	<u>357</u>	<u>92.4</u>	4	356	92.6	<u>355</u>	<u>92.9</u>	355	93.0
459.GemsFDTD	4	1910	22.2	<u>1910</u>	<u>22.2</u>	1913	22.2	4	1944	21.8	<u>1945</u>	<u>21.8</u>	1950	21.8
465.tonto	4	555	70.9	558	70.6	<u>558</u>	<u>70.6</u>	4	511	77.0	<u>513</u>	<u>76.8</u>	523	75.2
470.lbm	4	2726	20.2	2725	20.2	<u>2726</u>	<u>20.2</u>	2	941	29.2	939	29.3	<u>940</u>	<u>29.2</u>
481.wrf	4	<u>1055</u>	<u>42.3</u>	1047	42.7	1056	42.3	4	<u>1055</u>	<u>42.3</u>	1047	42.7	1056	42.3
482.sphinx3	4	1523	51.2	<u>1527</u>	<u>51.1</u>	1527	51.0	2	682	57.1	675	57.7	<u>676</u>	<u>57.6</u>

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

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
Adjacent Sector Prefetch Disabled



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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.lelie3d: -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: icc -m32

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: ifort -m32

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
 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

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

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Peak Optimization Flags (Continued)

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

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias -auto-ilp32

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

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch

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.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.xml>

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