



SPEC® CFP2006 Result

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IBM Corporation

SPECfp®_rate2006 = 71.0

IBM System x iDataPlex dx360 (Intel Xeon L5420)

SPECfp_rate_base2006 = 64.7

CPU2006 license: 11

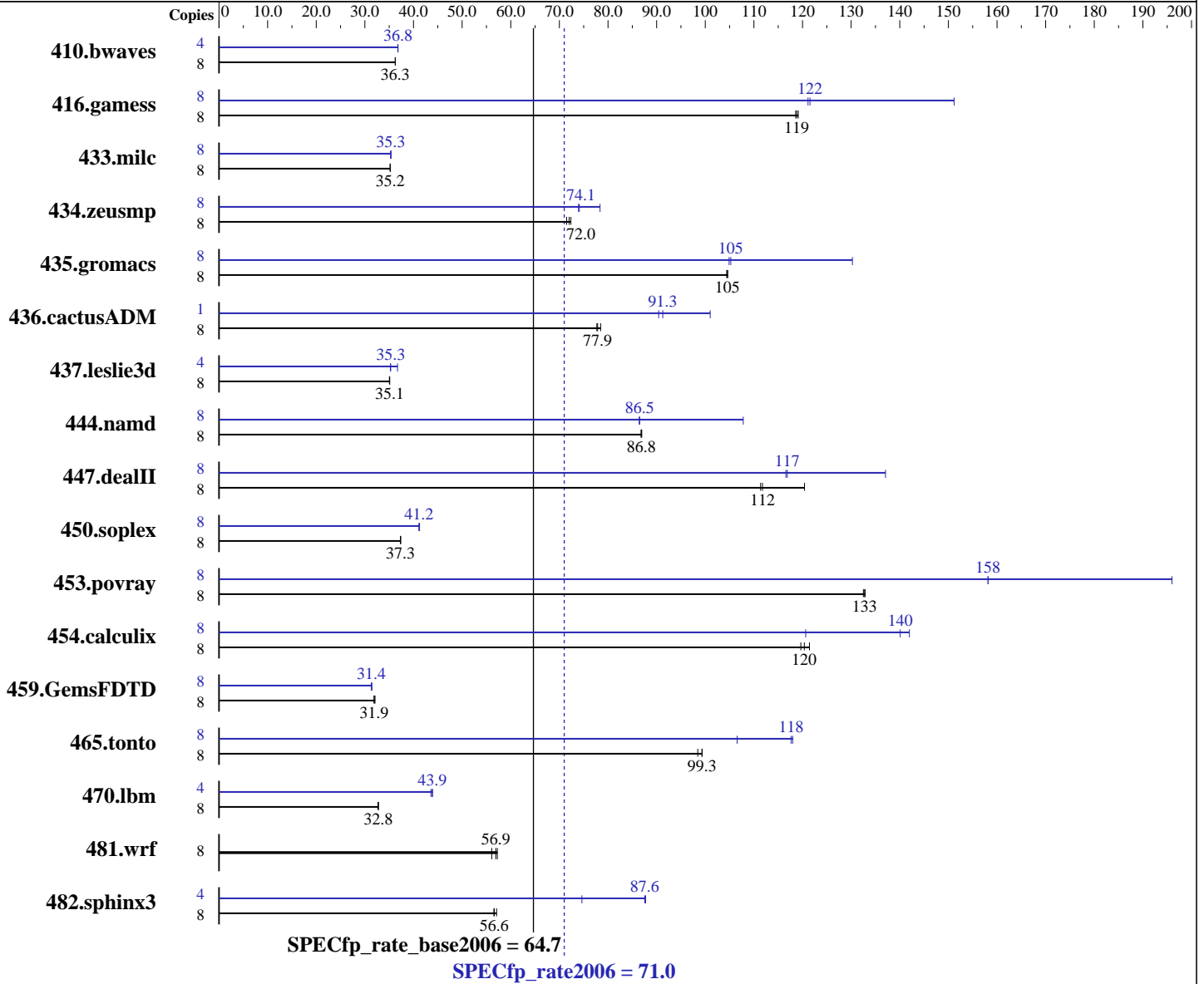
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Apr-2009

Hardware Availability: Nov-2008

Software Availability: Feb-2009



Hardware

CPU Name: Intel Xeon L5420
 CPU Characteristics: 1333MHz system bus
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 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) SP2, Kernel 2.6.16.60-0.21-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: 16 GB (8 x 2 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	8	2997	36.3	<u>2999</u>	<u>36.3</u>	2999	36.2	4	1478	36.8	<u>1477</u>	<u>36.8</u>	1477	36.8
416.gamess	8	<u>1318</u>	<u>119</u>	1315	119	1321	119	8	<u>1289</u>	<u>122</u>	1293	121	1036	151
433.milc	8	2085	35.2	<u>2086</u>	<u>35.2</u>	2086	35.2	8	<u>2078</u>	<u>35.3</u>	2077	35.4	2080	35.3
434.zeusmp	8	<u>1011</u>	<u>72.0</u>	1006	72.4	1018	71.5	8	<u>982</u>	<u>74.1</u>	985	73.9	929	78.4
435.gromacs	8	546	105	547	104	<u>546</u>	<u>105</u>	8	545	105	<u>543</u>	<u>105</u>	438	130
436.cactusADM	8	<u>1228</u>	<u>77.9</u>	1230	77.7	1218	78.5	1	132	90.4	<u>131</u>	<u>91.3</u>	118	101
437.leslie3d	8	2143	35.1	<u>2143</u>	<u>35.1</u>	2146	35.0	4	1067	35.3	<u>1065</u>	<u>35.3</u>	1024	36.7
444.namd	8	738	86.9	<u>739</u>	<u>86.8</u>	739	86.8	8	<u>742</u>	<u>86.5</u>	742	86.4	595	108
447.dealII	8	<u>819</u>	<u>112</u>	822	111	760	120	8	<u>783</u>	<u>117</u>	785	117	668	137
450.soplex	8	<u>1787</u>	<u>37.3</u>	1787	37.3	1787	37.3	8	1622	41.1	<u>1621</u>	<u>41.2</u>	1618	41.2
453.povray	8	321	133	<u>321</u>	<u>133</u>	320	133	8	<u>269</u>	<u>158</u>	269	158	217	196
454.calculix	8	544	121	<u>548</u>	<u>120</u>	552	120	8	547	121	465	142	<u>471</u>	<u>140</u>
459.GemsFDTD	8	2645	32.1	<u>2660</u>	<u>31.9</u>	2661	31.9	8	2707	31.4	2700	31.4	<u>2707</u>	<u>31.4</u>
465.tonto	8	800	98.5	<u>793</u>	<u>99.3</u>	792	99.4	8	739	107	667	118	<u>669</u>	<u>118</u>
470.lbm	8	3358	32.7	3356	32.8	<u>3356</u>	<u>32.8</u>	4	1261	43.6	1252	43.9	<u>1252</u>	<u>43.9</u>
481.wrf	8	1561	57.2	<u>1570</u>	<u>56.9</u>	1593	56.1	8	1561	57.2	<u>1570</u>	<u>56.9</u>	1593	56.1
482.sphinx3	8	<u>2754</u>	<u>56.6</u>	2731	57.1	2758	56.5	4	1045	74.6	<u>890</u>	<u>87.6</u>	889	87.7

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.

General Notes

taskset was used to bind processes to cores except for 436.cactusADM peak
Hardware Sector Prefetch Enable and Adjacent Sector Prefetch Disable
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M



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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.20090710.18.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.20090710.18.xml>

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