



SPEC® CFP2006 Result

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IBM Corporation

SPECfp®_rate2006 = 65.5

IBM System x iDataPlex dx340 (Intel Xeon E5405)

SPECfp_rate_base2006 = 60.5

CPU2006 license: 11

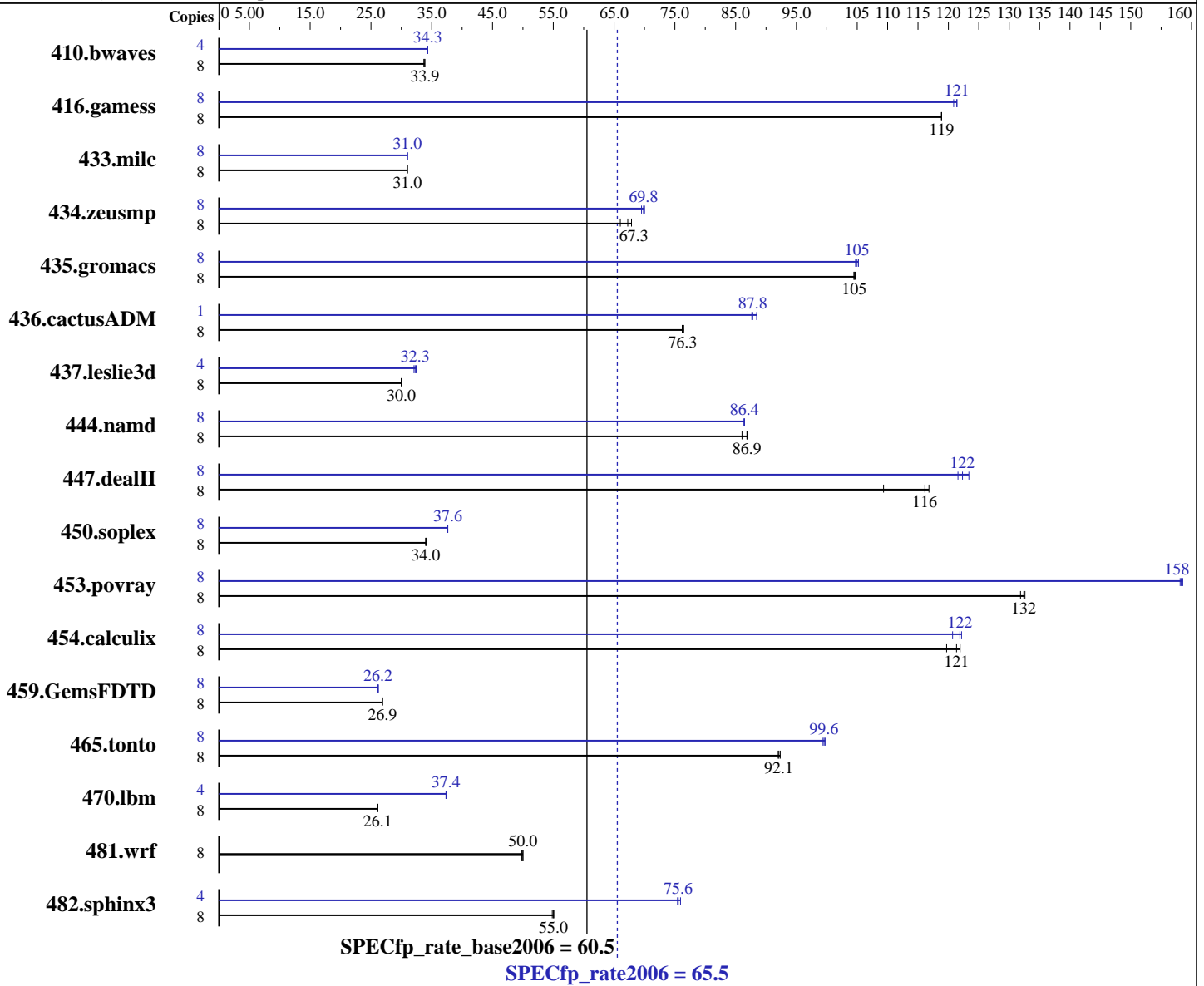
Test date: Apr-2009

Test sponsor: IBM Corporation

Hardware Availability: Oct-2008

Tested by: IBM Corporation

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E5405
 CPU Characteristics: 1333MHz system bus
 CPU MHz: 2000
 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

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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

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4 x 4 GB PC2-5300F 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	3226	33.7	3211	33.9	<u>3211</u>	<u>33.9</u>	4	1584	34.3	1583	34.3	<u>1584</u>	<u>34.3</u>
416.gamess	8	1320	119	1318	119	<u>1318</u>	<u>119</u>	8	1290	121	1296	121	<u>1290</u>	<u>121</u>
433.milc	8	2371	31.0	<u>2371</u>	<u>31.0</u>	2370	31.0	8	2368	31.0	2372	31.0	<u>2369</u>	<u>31.0</u>
434.zeusmp	8	1103	66.0	<u>1082</u>	<u>67.3</u>	1073	67.9	8	<u>1042</u>	<u>69.8</u>	1040	70.0	1047	69.5
435.gromacs	8	546	105	547	104	<u>547</u>	<u>105</u>	8	543	105	<u>544</u>	<u>105</u>	545	105
436.cactusADM	8	1254	76.2	1250	76.5	<u>1253</u>	<u>76.3</u>	1	135	88.5	136	87.7	<u>136</u>	<u>87.8</u>
437.leslie3d	8	2505	30.0	2507	30.0	<u>2506</u>	<u>30.0</u>	4	1172	32.1	1159	32.4	<u>1165</u>	<u>32.3</u>
444.namd	8	746	86.0	738	86.9	<u>739</u>	<u>86.9</u>	8	743	86.3	<u>742</u>	<u>86.4</u>	742	86.5
447.dealII	8	837	109	<u>788</u>	<u>116</u>	784	117	8	742	123	<u>748</u>	<u>122</u>	753	122
450.soplex	8	1960	34.0	<u>1961</u>	<u>34.0</u>	1961	34.0	8	1772	37.6	<u>1773</u>	<u>37.6</u>	1777	37.5
453.povray	8	<u>321</u>	<u>132</u>	323	132	321	133	8	<u>269</u>	<u>158</u>	268	159	269	158
454.calculix	8	<u>544</u>	<u>121</u>	551	120	541	122	8	<u>541</u>	<u>122</u>	540	122	547	121
459.GemsFDTD	8	3157	26.9	3158	26.9	<u>3158</u>	<u>26.9</u>	8	3240	26.2	<u>3242</u>	<u>26.2</u>	3243	26.2
465.tonto	8	<u>855</u>	<u>92.1</u>	852	92.3	856	92.0	8	792	99.4	<u>791</u>	<u>99.6</u>	789	99.7
470.lbm	8	4209	26.1	4208	26.1	<u>4208</u>	<u>26.1</u>	4	1472	37.3	<u>1471</u>	<u>37.4</u>	1471	37.4
481.wrf	8	1794	49.8	1787	50.0	<u>1787</u>	<u>50.0</u>	8	1794	49.8	1787	50.0	<u>1787</u>	<u>50.0</u>
482.sphinx3	8	2844	54.8	<u>2834</u>	<u>55.0</u>	2830	55.1	4	1033	75.4	1027	75.9	<u>1032</u>	<u>75.6</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.

General Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
taskset was used to bind processes to cores except
for 436.cactusADM peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
Hardware Prefetcher Enable and Adjacent Cache Line Prefetch Disable



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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.20090805.00.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.20090805.00.xml>

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