



SPEC® CFP2006 Result

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IBM Corporation

SPECfp®2006 = 34.8

IBM System x3690 X5 (Intel Xeon L7555)

SPECfp_base2006 = 31.9

CPU2006 license: 11

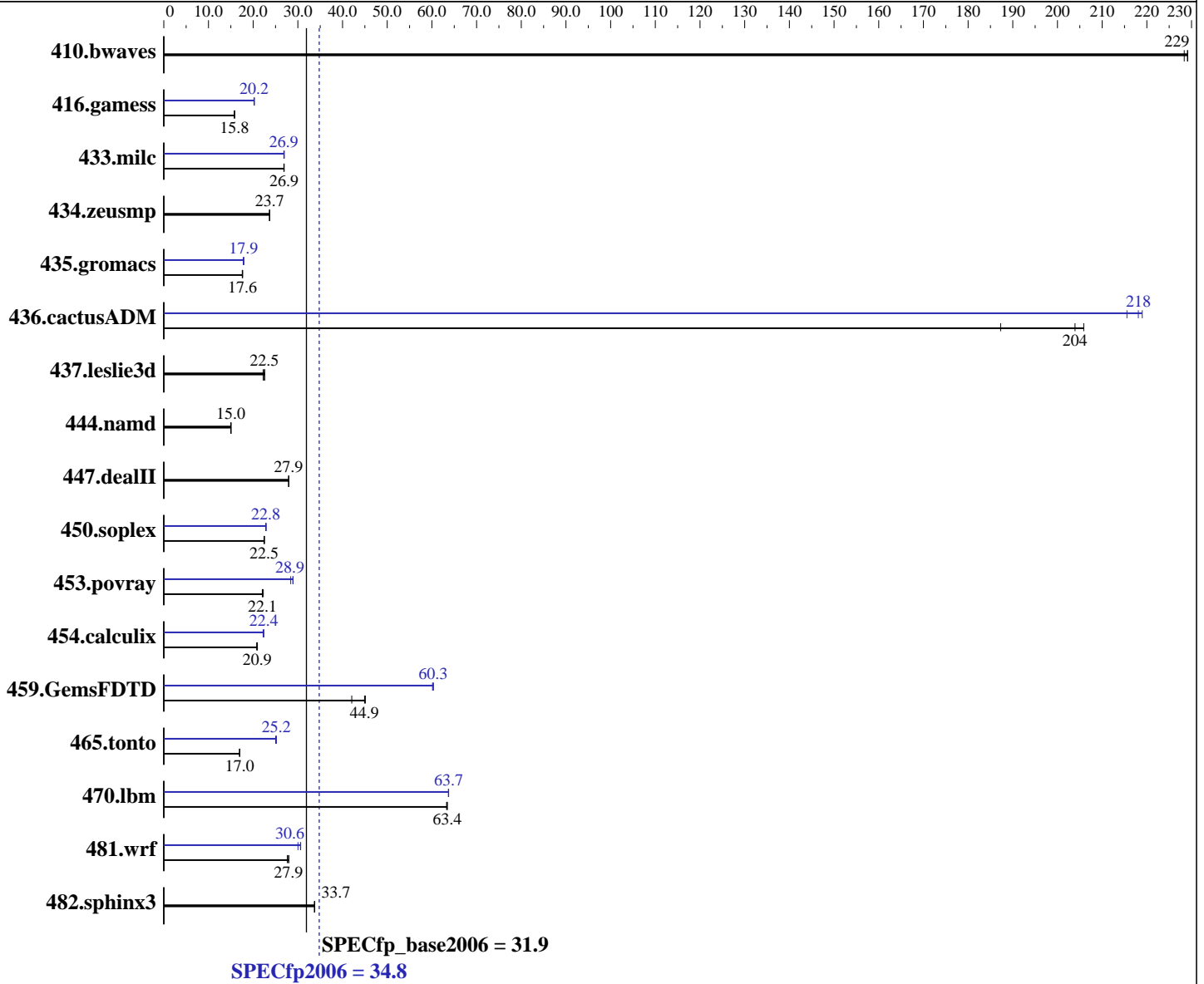
Test date: Jul-2010

Test sponsor: IBM Corporation

Hardware Availability: Aug-2010

Tested by: IBM Corporation

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon L7555
 CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz
 CPU MHz: 1867
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

Software

Operating System: SuSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 24 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (32 x 4 GB PC3-8500R CL7, Quad Rank, running at 978 MHz)
 Disk Subsystem: 1 x 146 GB SAS, 15000 RPM
 Other Hardware: None

Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	59.3	229	59.5	228	59.3	229	59.3	229	59.5	228	59.3	229
416.gamess	1239	15.8	1232	15.9	1240	15.8	967	20.2	968	20.2	968	20.2
433.milc	341	26.9	342	26.9	341	26.9	340	27.0	342	26.9	341	26.9
434.zeusmp	384	23.7	384	23.7	385	23.6	384	23.7	384	23.7	385	23.6
435.gromacs	405	17.6	405	17.6	407	17.6	399	17.9	402	17.8	399	17.9
436.cactusADM	63.8	187	58.6	204	58.0	206	55.4	216	54.8	218	54.6	219
437.leslie3d	423	22.2	416	22.6	418	22.5	423	22.2	416	22.6	418	22.5
444.namd	534	15.0	535	15.0	533	15.0	534	15.0	535	15.0	533	15.0
447.dealII	409	27.9	409	27.9	409	28.0	409	27.9	409	27.9	409	28.0
450.soplex	371	22.5	371	22.5	370	22.5	364	22.9	365	22.8	365	22.8
453.povray	241	22.1	239	22.3	241	22.0	184	28.9	184	28.9	187	28.4
454.calculix	394	21.0	395	20.9	397	20.8	369	22.4	369	22.4	371	22.2
459.GemsFDTD	236	44.9	252	42.1	235	45.1	176	60.3	176	60.3	176	60.1
465.tonto	581	16.9	579	17.0	579	17.0	391	25.2	393	25.0	391	25.2
470.lbm	217	63.4	217	63.4	217	63.3	216	63.7	216	63.7	216	63.7
481.wrf	400	27.9	399	28.0	404	27.6	365	30.6	365	30.6	372	30.0
482.sphinx3	577	33.8	578	33.7	578	33.7	577	33.8	578	33.7	578	33.7

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

Platform Notes

Turbo Boost set to Traditional

General Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
 Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
 OMP_NUM_THREADS set to number of cores
 KMP_AFFINITY set to granularity=fine,scatter
 KMP_STACKSIZE set to 200M



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Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch



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Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

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

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-parallel -ansi-alias -auto-ilp32

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: basepeak = yes

447.dealII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3 -auto-ilp32

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

Fortran benchmarks:

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Peak Optimization Flags (Continued)

410.bwaves: basepeak = yes

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

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

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

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

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

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

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100603.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100603.xml>

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