



SPEC® CFP2006 Result

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Supermicro

SPECfp®2006 = 38.0

Motherboard X8SIE-F (Intel Xeon X3460, 2.80 GHz)

SPECfp_base2006 = 33.8

CPU2006 license: 001176

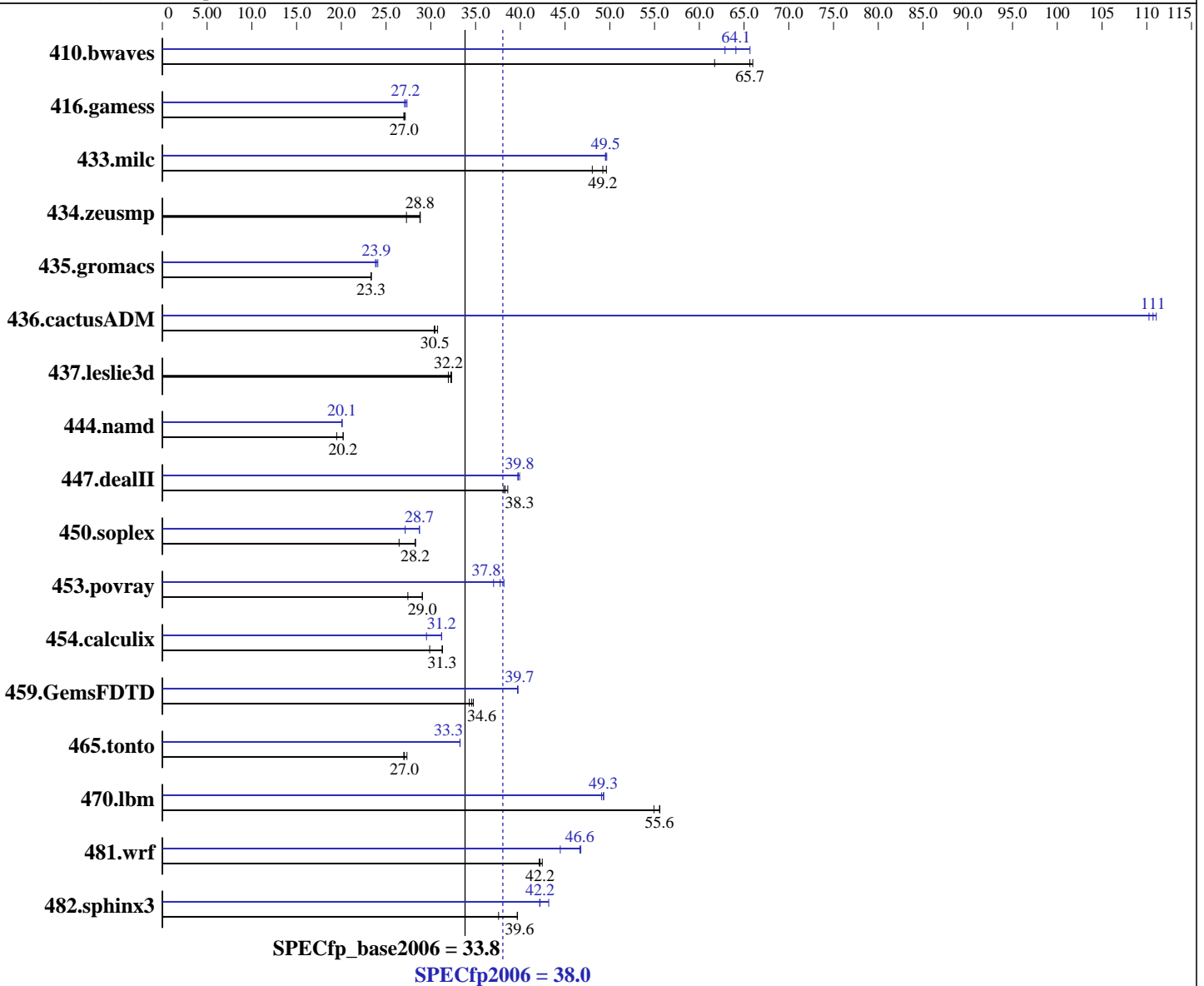
Test date: Feb-2010

Test sponsor: Supermicro

Hardware Availability: Sep-2009

Tested by: Supermicro

Software Availability: Oct-2009



Hardware

CPU Name: Intel Xeon X3460
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

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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 20091012 Package ID: l_cproc_p_11.1.059, l_cprof_p_11.1.059
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (4 x 4GB DDR3-1333 RDIMM, ECC, CL9)
 Disk Subsystem: 1 x 160 GB SATA II, 7200 RPM
 Other Hardware: None

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	220	61.7	206	66.0	<u>207</u>	<u>65.7</u>	<u>212</u>	<u>64.1</u>	216	62.9	207	65.7
416.gamess	725	27.0	<u>725</u>	<u>27.0</u>	721	27.1	716	27.3	723	27.1	<u>721</u>	<u>27.2</u>
433.milc	185	49.6	191	48.0	<u>187</u>	<u>49.2</u>	185	49.7	<u>185</u>	<u>49.5</u>	185	49.5
434.zeusmp	316	28.8	334	27.3	<u>316</u>	<u>28.8</u>	316	28.8	334	27.3	<u>316</u>	<u>28.8</u>
435.gromacs	306	23.4	<u>306</u>	<u>23.3</u>	306	23.3	<u>299</u>	<u>23.9</u>	297	24.1	300	23.8
436.cactusADM	<u>392</u>	<u>30.5</u>	393	30.4	389	30.8	108	110	<u>108</u>	<u>111</u>	108	111
437.leslie3d	291	32.3	294	32.0	<u>292</u>	<u>32.2</u>	291	32.3	294	32.0	<u>292</u>	<u>32.2</u>
444.namd	412	19.5	397	20.2	<u>397</u>	<u>20.2</u>	399	20.1	400	20.1	<u>399</u>	<u>20.1</u>
447.dealII	<u>299</u>	<u>38.3</u>	296	38.6	300	38.1	287	39.9	288	39.7	<u>288</u>	<u>39.8</u>
450.soplex	<u>295</u>	<u>28.2</u>	295	28.3	315	26.5	<u>290</u>	<u>28.7</u>	307	27.1	290	28.7
453.povray	194	27.4	<u>183</u>	<u>29.0</u>	183	29.1	139	38.2	144	37.0	<u>141</u>	<u>37.8</u>
454.calculix	276	29.9	<u>264</u>	<u>31.3</u>	264	31.3	279	29.5	<u>264</u>	<u>31.2</u>	264	31.2
459.GemsFDTD	305	34.8	309	34.3	<u>307</u>	<u>34.6</u>	<u>267</u>	<u>39.7</u>	267	39.7	267	39.7
465.tonto	360	27.3	<u>364</u>	<u>27.0</u>	365	27.0	296	33.3	296	33.3	<u>296</u>	<u>33.3</u>
470.lbm	<u>247</u>	<u>55.6</u>	247	55.6	250	54.9	280	49.1	279	49.3	<u>279</u>	<u>49.3</u>
481.wrf	263	42.5	265	42.1	<u>265</u>	<u>42.2</u>	251	44.5	<u>239</u>	<u>46.6</u>	239	46.8
482.sphinx3	491	39.7	519	37.6	<u>492</u>	<u>39.6</u>	451	43.2	462	42.2	<u>462</u>	<u>42.2</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.
numactl was used to bind copies to the cores

Platform Notes

Default BIOS Settings

General Notes

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

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch



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Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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: -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)
 -ansi-alias -parallel -auto-ilp32

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Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -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)
-fno-alias -auto-ilp32

447.dealII: -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 -ansi-alias -scalar-rep- -auto-ilp32

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

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:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

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

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Peak Optimization Flags (Continued)

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-fp-linux64-revE.20100202.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revE.20100202.xml>

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For other inquiries, please contact webmaster@spec.org.

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