



# SPEC® CFP2006 Result

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## Supermicro

SPECfp®2006 = 43.8

Motherboard X8DAL-3 (Intel Xeon X5660, 2.80GHz)

SPECfp\_base2006 = 41.0

CPU2006 license: 001176

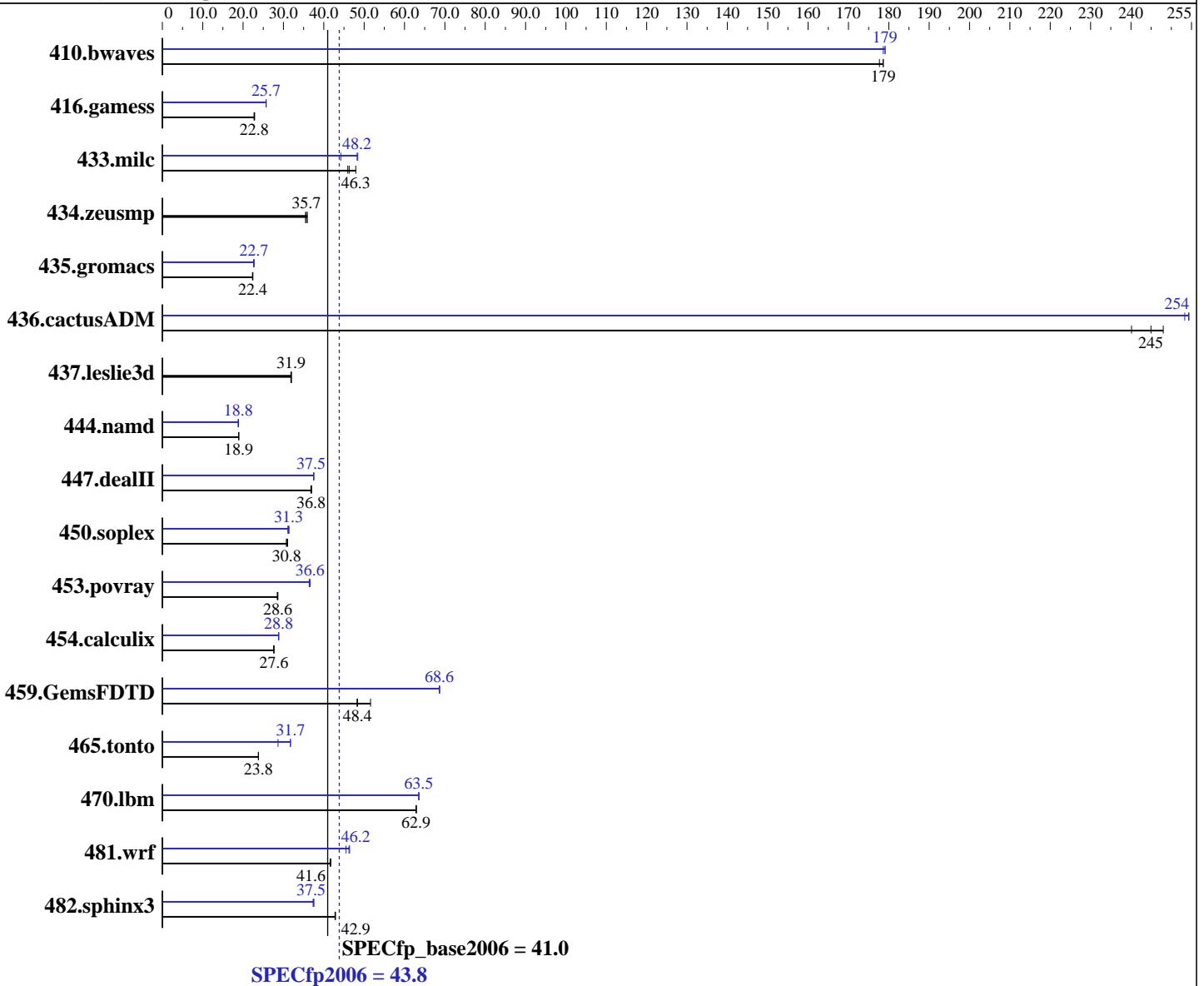
Test date: Apr-2010

Test sponsor: Supermicro

Hardware Availability: Mar-2010

Tested by: Supermicro

Software Availability: Nov-2009



### Hardware

CPU Name: Intel Xeon X5660  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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

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### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64)  
 Kernel 2.6.16.60-0.54.5-smp  
 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: ReiserFS  
 System State: Run level 3 (multi-user)

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L3 Cache: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB (6 x 4 GB DDR3-1333 RDIMM, ECC, CL9)  
 Disk Subsystem: 1 x 300 GB SATA II, 7200 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	76.5	178	<b><u>76.1</u></b>	<b><u>179</u></b>	76.1	179	75.9	179	76.1	179	<b><u>75.9</u></b>	<b><u>179</u></b>
416.gamess	856	22.9	<b><u>860</u></b>	<b><u>22.8</u></b>	861	22.7	<b><u>761</u></b>	<b><u>25.7</u></b>	762	25.7	761	25.7
433.milc	192	47.9	<b><u>198</u></b>	<b><u>46.3</u></b>	200	45.9	190	48.4	208	44.2	<b><u>190</u></b>	<b><u>48.2</u></b>
434.zeusmp	253	35.9	<b><u>255</u></b>	<b><u>35.7</u></b>	256	35.5	253	35.9	<b><u>255</u></b>	<b><u>35.7</u></b>	256	35.5
435.gromacs	318	22.4	<b><u>319</u></b>	<b><u>22.4</u></b>	320	22.3	<b><u>314</u></b>	<b><u>22.7</u></b>	314	22.7	316	22.6
436.cactusADM	48.2	248	49.8	240	<b><u>48.8</u></b>	<b><u>245</u></b>	47.2	253	<b><u>47.0</u></b>	<b><u>254</u></b>	47.0	254
437.leslie3d	295	31.8	<b><u>295</u></b>	<b><u>31.9</u></b>	294	32.0	295	31.8	<b><u>295</u></b>	<b><u>31.9</u></b>	294	32.0
444.namd	424	18.9	<b><u>424</u></b>	<b><u>18.9</u></b>	424	18.9	426	18.8	<b><u>426</u></b>	<b><u>18.8</u></b>	426	18.8
447.dealII	311	36.8	309	37.0	<b><u>310</u></b>	<b><u>36.8</u></b>	305	37.5	305	37.5	<b><u>305</u></b>	<b><u>37.5</u></b>
450.soplex	<b><u>271</u></b>	<b><u>30.8</u></b>	269	31.0	271	30.7	<b><u>267</u></b>	<b><u>31.3</u></b>	268	31.1	266	31.4
453.povray	<b><u>186</u></b>	<b><u>28.6</u></b>	187	28.5	186	28.6	<b><u>145</u></b>	<b><u>36.6</u></b>	145	36.6	146	36.4
454.calculix	<b><u>299</u></b>	<b><u>27.6</u></b>	299	27.6	298	27.7	<b><u>286</u></b>	<b><u>28.8</u></b>	286	28.8	286	28.8
459.GemsFDTD	206	51.6	220	48.2	<b><u>219</u></b>	<b><u>48.4</u></b>	154	68.7	155	68.6	<b><u>155</u></b>	<b><u>68.6</u></b>
465.tonto	<b><u>413</u></b>	<b><u>23.8</u></b>	413	23.8	414	23.8	343	28.7	310	31.7	<b><u>310</u></b>	<b><u>31.7</u></b>
470.lbm	<b><u>218</u></b>	<b><u>62.9</u></b>	218	62.9	219	62.9	<b><u>216</u></b>	<b><u>63.5</u></b>	216	63.6	216	63.5
481.wrf	268	41.7	269	41.6	<b><u>268</u></b>	<b><u>41.6</u></b>	<b><u>242</u></b>	<b><u>46.2</u></b>	241	46.4	245	45.5
482.sphinx3	456	42.8	455	42.9	<b><u>455</u></b>	<b><u>42.9</u></b>	522	37.3	519	37.5	<b><u>520</u></b>	<b><u>37.5</u></b>

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

## Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run  
 KMP\_AFFINITY set to granularity=fine,scatter  
 KMP\_STACKSIZE set to 200M

## Platform Notes

Fan speed set to Full Speed in BIOS Setup.  
 As tested, the system used a Supermicro  
 SP645-PS power supply, 2 SNK-P0035AP4 heatsinks,  
 and 1 JMC1225-12HB, 1 SAN cooler XF-P01603,  
 2 Nidec UltraFlo T92T12MMA7-57 T072 cooling fans.



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Test date: Apr-2010  
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## General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

## 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 -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

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

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

## 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: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32  
-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.dealIII: `-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`

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## Peak Optimization Flags (Continued)

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:

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

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.20100316.html>



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

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