



# SPEC® CFP2006 Result

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## Supermicro

SPECfp®2006 = 34.5

Motherboard X8SIT-F (Intel Xeon X3440, 2.53 GHz)

SPECfp\_base2006 = 32.8

CPU2006 license: 001176

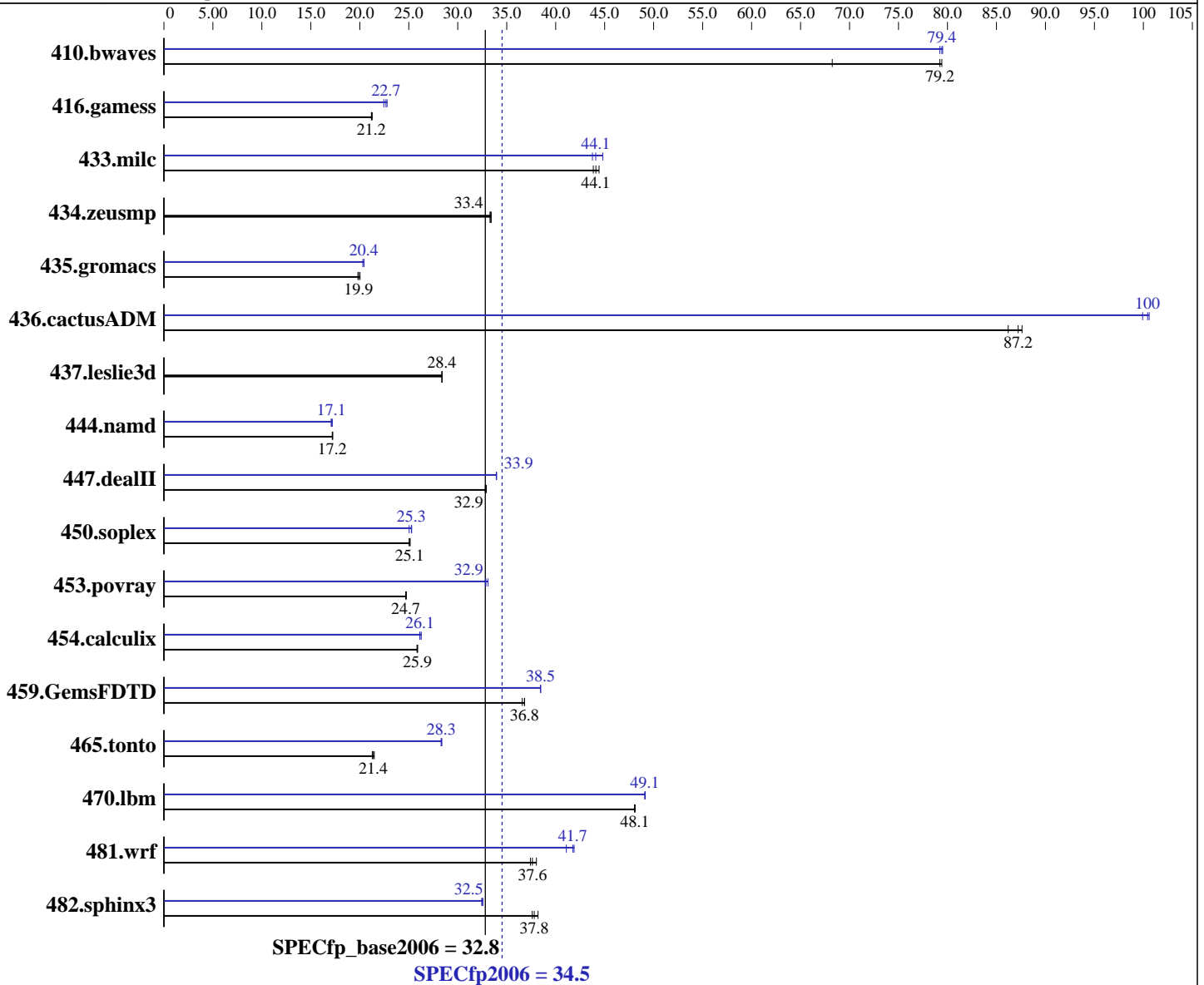
Test date: May-2010

Test sponsor: Supermicro

Hardware Availability: Mar-2010

Tested by: Supermicro

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon X3440  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz  
 CPU MHz: 2533  
 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 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (4 x 4 GB 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: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	199	68.2	171	79.4	<u>172</u>	<u>79.2</u>	172	79.2	<u>171</u>	<u>79.4</u>	171	79.5
416.gamess	924	21.2	<u>924</u>	<u>21.2</u>	921	21.3	<u>864</u>	<u>22.7</u>	859	22.8	872	22.5
433.milc	<u>208</u>	<u>44.1</u>	207	44.4	209	43.8	<u>208</u>	<u>44.1</u>	205	44.8	210	43.8
434.zeusmp	272	33.4	273	33.3	<u>273</u>	<u>33.4</u>	272	33.4	273	33.3	<u>273</u>	<u>33.4</u>
435.gromacs	357	20.0	<u>359</u>	<u>19.9</u>	360	19.8	352	20.3	349	20.4	<u>350</u>	<u>20.4</u>
436.cactusADM	139	86.2	136	87.6	<u>137</u>	<u>87.2</u>	<u>119</u>	<u>100</u>	119	101	120	99.9
437.leslie3d	331	28.4	<u>331</u>	<u>28.4</u>	331	28.4	331	28.4	<u>331</u>	<u>28.4</u>	331	28.4
444.namd	465	17.2	<u>466</u>	<u>17.2</u>	466	17.2	469	17.1	<u>469</u>	<u>17.1</u>	466	17.2
447.dealII	349	32.8	347	32.9	<u>348</u>	<u>32.9</u>	337	33.9	337	34.0	<u>337</u>	<u>33.9</u>
450.soplex	333	25.0	<u>333</u>	<u>25.1</u>	332	25.1	333	25.0	330	25.3	<u>330</u>	<u>25.3</u>
453.povray	<u>215</u>	<u>24.7</u>	215	24.7	215	24.8	<u>162</u>	<u>32.9</u>	161	33.1	162	32.8
454.calculix	319	25.8	318	25.9	<u>319</u>	<u>25.9</u>	<u>316</u>	<u>26.1</u>	316	26.1	314	26.3
459.GemsFDTD	290	36.6	288	36.8	<u>288</u>	<u>36.8</u>	276	38.4	<u>276</u>	<u>38.5</u>	276	38.5
465.tonto	458	21.5	463	21.3	<u>460</u>	<u>21.4</u>	348	28.3	<u>347</u>	<u>28.3</u>	347	28.4
470.lbm	286	48.1	286	48.0	<u>286</u>	<u>48.1</u>	280	49.1	280	49.1	<u>280</u>	<u>49.1</u>
481.wrf	<u>297</u>	<u>37.6</u>	299	37.4	294	38.0	272	41.1	<u>268</u>	<u>41.7</u>	267	41.9
482.sphinx3	510	38.2	<u>516</u>	<u>37.8</u>	518	37.6	600	32.5	598	32.6	<u>600</u>	<u>32.5</u>

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  
 OMP\_NUM\_THREADS set to number of cores  
 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  
 PWS-1K21P-1R power supply, SNK-P0046P heatsink,  
 and FAN-0077L cooling fan.



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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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