



# SPEC® CFP2006 Result

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## Supermicro

SPECfp®2006 = 33.5

Motherboard X8SIT-F (Intel Xeon X3430, 2.40 GHz)

SPECfp\_base2006 = 31.8

CPU2006 license: 001176

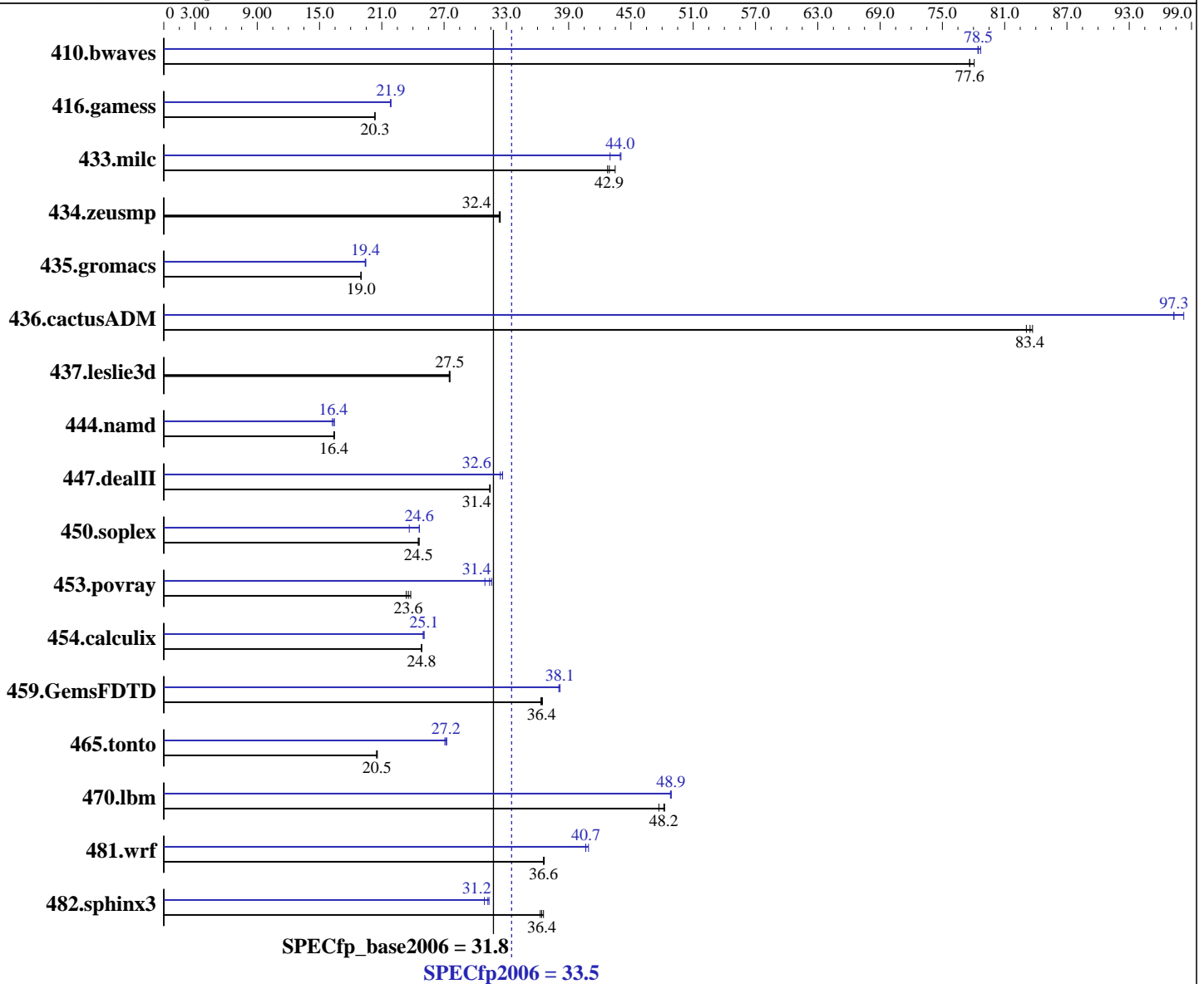
Test date: May-2010

Test sponsor: Supermicro

Hardware Availability: Mar-2010

Tested by: Supermicro

Software Availability: Jan-2010



**Hardware**

CPU Name: Intel Xeon X3430  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 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	<b><u>175</u></b>	<b><u>77.6</u></b>	174	78.1	175	77.6	173	78.4	173	78.7	<b><u>173</u></b>	<b><u>78.5</u></b>
416.gamess	963	20.3	<b><u>963</u></b>	<b><u>20.3</u></b>	962	20.3	<b><u>895</u></b>	<b><u>21.9</u></b>	895	21.9	897	21.8
433.milc	215	42.7	<b><u>214</u></b>	<b><u>42.9</u></b>	211	43.5	<b><u>209</u></b>	<b><u>44.0</u></b>	208	44.0	214	43.0
434.zeusmp	281	32.4	282	32.3	<b><u>281</u></b>	<b><u>32.4</u></b>	281	32.4	282	32.3	<b><u>281</u></b>	<b><u>32.4</u></b>
435.gromacs	375	19.0	376	19.0	<b><u>376</u></b>	<b><u>19.0</u></b>	<b><u>368</u></b>	<b><u>19.4</u></b>	367	19.5	368	19.4
436.cactusADM	<b><u>143</u></b>	<b><u>83.4</u></b>	143	83.7	144	83.1	123	97.3	<b><u>123</u></b>	<b><u>97.3</u></b>	122	98.3
437.leslie3d	342	27.5	<b><u>341</u></b>	<b><u>27.5</u></b>	341	27.6	342	27.5	<b><u>341</u></b>	<b><u>27.5</u></b>	341	27.6
444.namd	488	16.4	490	16.4	<b><u>489</u></b>	<b><u>16.4</u></b>	488	16.4	494	16.2	<b><u>490</u></b>	<b><u>16.4</u></b>
447.dealII	364	31.4	<b><u>364</u></b>	<b><u>31.4</u></b>	364	31.4	351	32.6	353	32.4	<b><u>351</u></b>	<b><u>32.6</u></b>
450.soplex	339	24.6	340	24.5	<b><u>340</u></b>	<b><u>24.5</u></b>	353	23.6	<b><u>339</u></b>	<b><u>24.6</u></b>	339	24.6
453.povray	<b><u>226</u></b>	<b><u>23.6</u></b>	228	23.4	224	23.8	172	30.9	168	31.6	<b><u>170</u></b>	<b><u>31.4</u></b>
454.calculix	<b><u>332</u></b>	<b><u>24.8</u></b>	332	24.8	332	24.8	330	25.0	329	25.1	<b><u>329</u></b>	<b><u>25.1</u></b>
459.GemsFDTD	291	36.5	<b><u>291</u></b>	<b><u>36.4</u></b>	292	36.3	279	38.1	278	38.2	<b><u>278</u></b>	<b><u>38.1</u></b>
465.tonto	478	20.6	480	20.5	<b><u>480</u></b>	<b><u>20.5</u></b>	363	27.1	<b><u>362</u></b>	<b><u>27.2</u></b>	361	27.3
470.lbm	285	48.2	<b><u>285</u></b>	<b><u>48.2</u></b>	288	47.7	282	48.8	281	48.9	<b><u>281</u></b>	<b><u>48.9</u></b>
481.wrf	<b><u>305</u></b>	<b><u>36.6</u></b>	305	36.7	306	36.6	275	40.6	<b><u>275</u></b>	<b><u>40.7</u></b>	273	40.9
482.sphinx3	533	36.6	<b><u>535</u></b>	<b><u>36.4</u></b>	537	36.3	631	30.9	<b><u>624</u></b>	<b><u>31.2</u></b>	622	31.3

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:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100316.xml>

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