



# SPEC® CFP2006 Result

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## Supermicro

SPECfp®2006 = 37.8

Motherboard X8DTE-F (Intel Xeon E5630, 2.53 GHz)

SPECfp\_base2006 = 35.5

CPU2006 license: 001176

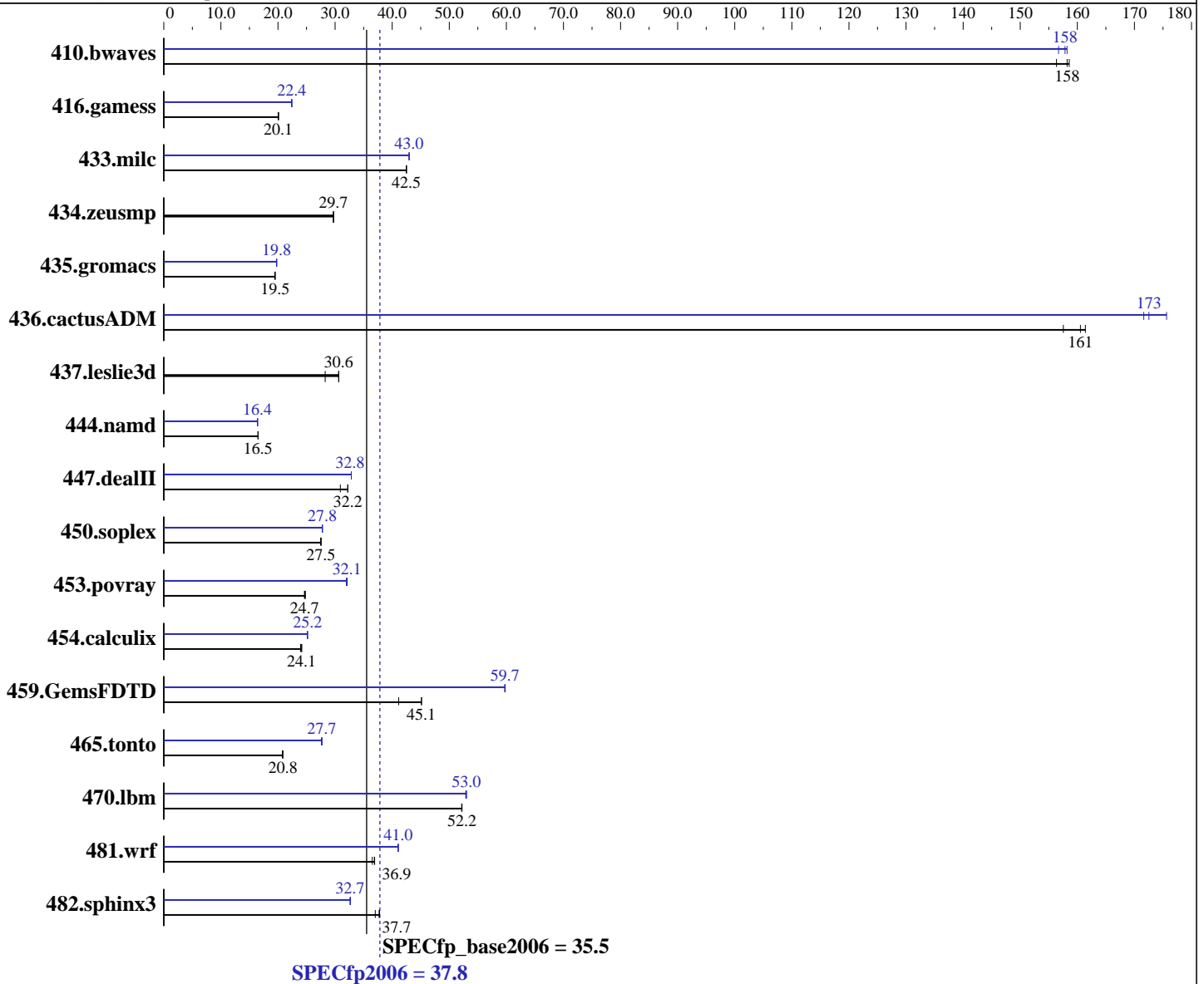
Test date: May-2010

Test sponsor: Supermicro

Hardware Availability: Mar-2010

Tested by: Supermicro

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon E5630  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2533  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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 2.6.27.19-5-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: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12 x 4 GB DDR3-1066 RDIMM, ECC, CL7)  
 Disk Subsystem: 1 x 500 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	86.9	156	<b>85.9</b>	<b>158</b>	85.7	159	86.7	157	<b>86.1</b>	<b>158</b>	85.9	158
416.gamess	975	20.1	976	20.1	<b>976</b>	<b>20.1</b>	873	22.4	875	22.4	<b>873</b>	<b>22.4</b>
433.milc	<b>216</b>	<b>42.5</b>	216	42.5	216	42.5	214	43.0	214	43.0	<b>214</b>	<b>43.0</b>
434.zeusmp	306	29.7	306	29.7	<b>306</b>	<b>29.7</b>	306	29.7	306	29.7	<b>306</b>	<b>29.7</b>
435.gromacs	367	19.4	<b>366</b>	<b>19.5</b>	366	19.5	362	19.7	361	19.8	<b>361</b>	<b>19.8</b>
436.cactusADM	74.0	161	75.8	158	<b>74.4</b>	<b>161</b>	68.0	176	69.6	172	<b>69.3</b>	<b>173</b>
437.leslie3d	333	28.3	307	30.6	<b>307</b>	<b>30.6</b>	333	28.3	307	30.6	<b>307</b>	<b>30.6</b>
444.namd	<b>486</b>	<b>16.5</b>	486	16.5	486	16.5	<b>488</b>	<b>16.4</b>	489	16.4	488	16.4
447.dealII	355	32.2	370	30.9	<b>355</b>	<b>32.2</b>	<b>348</b>	<b>32.8</b>	348	32.8	348	32.8
450.soplex	303	27.5	303	27.6	<b>303</b>	<b>27.5</b>	<b>301</b>	<b>27.8</b>	300	27.8	301	27.8
453.povray	<b>216</b>	<b>24.7</b>	214	24.8	216	24.6	166	32.1	<b>166</b>	<b>32.1</b>	166	32.0
454.calculix	342	24.1	<b>342</b>	<b>24.1</b>	344	24.0	<b>328</b>	<b>25.2</b>	328	25.2	328	25.1
459.GemsFDTD	<b>235</b>	<b>45.1</b>	258	41.1	235	45.2	178	59.7	<b>178</b>	<b>59.7</b>	177	59.8
465.tonto	474	20.8	472	20.9	<b>472</b>	<b>20.8</b>	355	27.7	356	27.6	<b>355</b>	<b>27.7</b>
470.lbm	263	52.2	263	52.2	<b>263</b>	<b>52.2</b>	259	53.0	<b>259</b>	<b>53.0</b>	260	52.9
481.wrf	302	36.9	<b>303</b>	<b>36.9</b>	306	36.5	272	41.0	272	41.1	<b>272</b>	<b>41.0</b>
482.sphinx3	516	37.8	<b>517</b>	<b>37.7</b>	526	37.0	<b>597</b>	<b>32.7</b>	598	32.6	596	32.7

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 CSE-743TQ-865B chassis.  
 The chassis is configured with a PWS-865-PQ power supply, 2 SNK-P0038P heatsinks,  
 as well as 4 FAN-0074L and 2 FAN-0082L4 cooling fans.



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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.20100804.html>



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