



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

SPECfp<sup>®</sup>2006 = 30.6

Motherboard X8SIU-F (Intel Core i3-540, 3.06 GHz)

SPECfp\_base2006 = 29.3

CPU2006 license: 001176

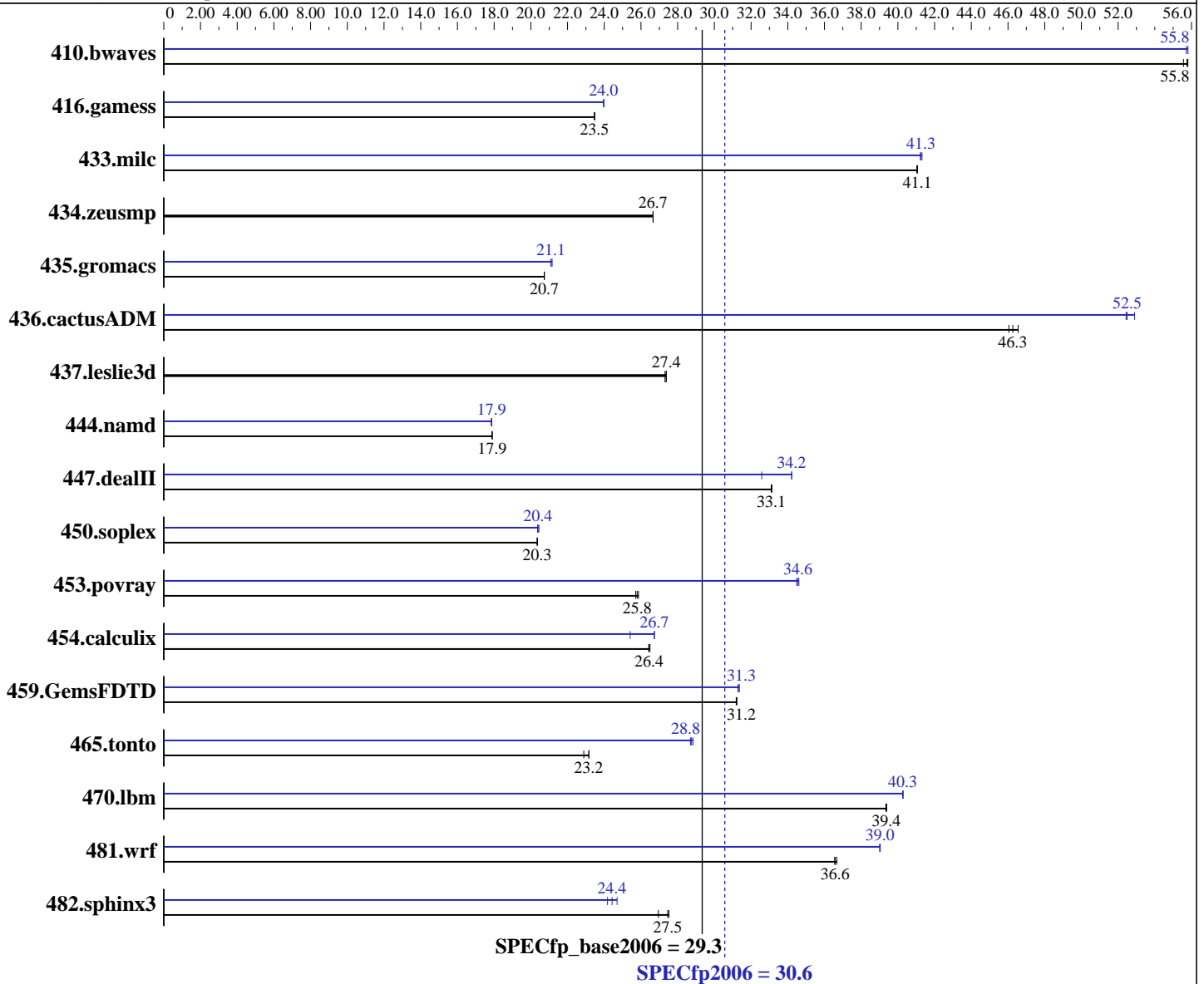
Test date: Jun-2010

Test sponsor: Supermicro

Hardware Availability: Apr-2010

Tested by: Supermicro

Software Availability: Jan-2010



Hardware		Software	
CPU Name:	Intel Core i3-540	Operating System:	SUSE Linux Enterprise Server 11 (x86_64)
CPU Characteristics:			Kernel 2.6.27.19-5-default
CPU MHz:	3067	Compiler:	Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1
FPU:	Integrated		Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip, 2 threads/core	Auto Parallel:	Yes
CPU(s) orderable:	1 chip	File System:	ext3
Primary Cache:	32 KB I + 32 KB D on chip per core	System State:	Run level 3 (multi-user)
Secondary Cache:	256 KB I+D on chip per core		
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L3 Cache: 4 MB I+D on chip per chip  
Other Cache: None  
Memory: 16 GB (4 x 4 GB 2Rx8 DDR3-1333 UDIMM, 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	245	55.6	244	55.8	<b>244</b>	<b>55.8</b>	<b>244</b>	<b>55.8</b>	244	55.8	244	55.7
416.gamess	<b>834</b>	<b>23.5</b>	834	23.5	834	23.5	817	24.0	<b>817</b>	<b>24.0</b>	817	24.0
433.milc	224	41.1	<b>224</b>	<b>41.1</b>	224	41.0	223	41.2	<b>223</b>	<b>41.3</b>	222	41.3
434.zeusmp	341	26.7	341	26.7	<b>341</b>	<b>26.7</b>	341	26.7	341	26.7	<b>341</b>	<b>26.7</b>
435.gromacs	344	20.7	344	20.7	<b>344</b>	<b>20.7</b>	337	21.2	<b>338</b>	<b>21.1</b>	339	21.1
436.cactusADM	257	46.6	<b>258</b>	<b>46.3</b>	260	46.0	226	52.9	<b>228</b>	<b>52.5</b>	228	52.4
437.leslie3d	344	27.3	343	27.4	<b>343</b>	<b>27.4</b>	344	27.3	343	27.4	<b>343</b>	<b>27.4</b>
444.namd	448	17.9	<b>448</b>	<b>17.9</b>	448	17.9	449	17.9	<b>449</b>	<b>17.9</b>	450	17.8
447.dealII	<b>346</b>	<b>33.1</b>	346	33.1	345	33.1	334	34.2	351	32.6	<b>334</b>	<b>34.2</b>
450.soplex	<b>410</b>	<b>20.3</b>	410	20.4	410	20.3	410	20.4	<b>409</b>	<b>20.4</b>	408	20.4
453.povray	207	25.7	<b>206</b>	<b>25.8</b>	206	25.9	154	34.6	154	34.5	<b>154</b>	<b>34.6</b>
454.calculix	311	26.5	312	26.4	<b>312</b>	<b>26.4</b>	<b>309</b>	<b>26.7</b>	309	26.7	325	25.4
459.GemsFDTD	340	31.2	340	31.2	<b>340</b>	<b>31.2</b>	338	31.4	<b>339</b>	<b>31.3</b>	339	31.3
465.tonto	430	22.9	425	23.2	<b>425</b>	<b>23.2</b>	341	28.8	<b>342</b>	<b>28.8</b>	343	28.7
470.lbm	<b>349</b>	<b>39.4</b>	349	39.3	349	39.4	341	40.3	<b>341</b>	<b>40.3</b>	341	40.3
481.wrf	306	36.6	305	36.7	<b>305</b>	<b>36.6</b>	286	39.0	<b>286</b>	<b>39.0</b>	286	39.0
482.sphinx3	723	26.9	<b>710</b>	<b>27.5</b>	708	27.5	789	24.7	806	24.2	<b>798</b>	<b>24.4</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  
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-815TQ-330UB chassis.  
The chassis is bundled with a PWS-333-1H20 power supply, a SNK-P0046P heatsink,  
and 4 FAN-0086L4 cooling fans.



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**Test date:** Jun-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.20100915.html>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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