



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

### SPECfp<sup>®</sup>\_rate2006 = 89.6

### Motherboard X8SIL (Intel Xeon X3470, 2.93 GHz)

### SPECfp\_rate\_base2006 = 86.3

CPU2006 license: 001176

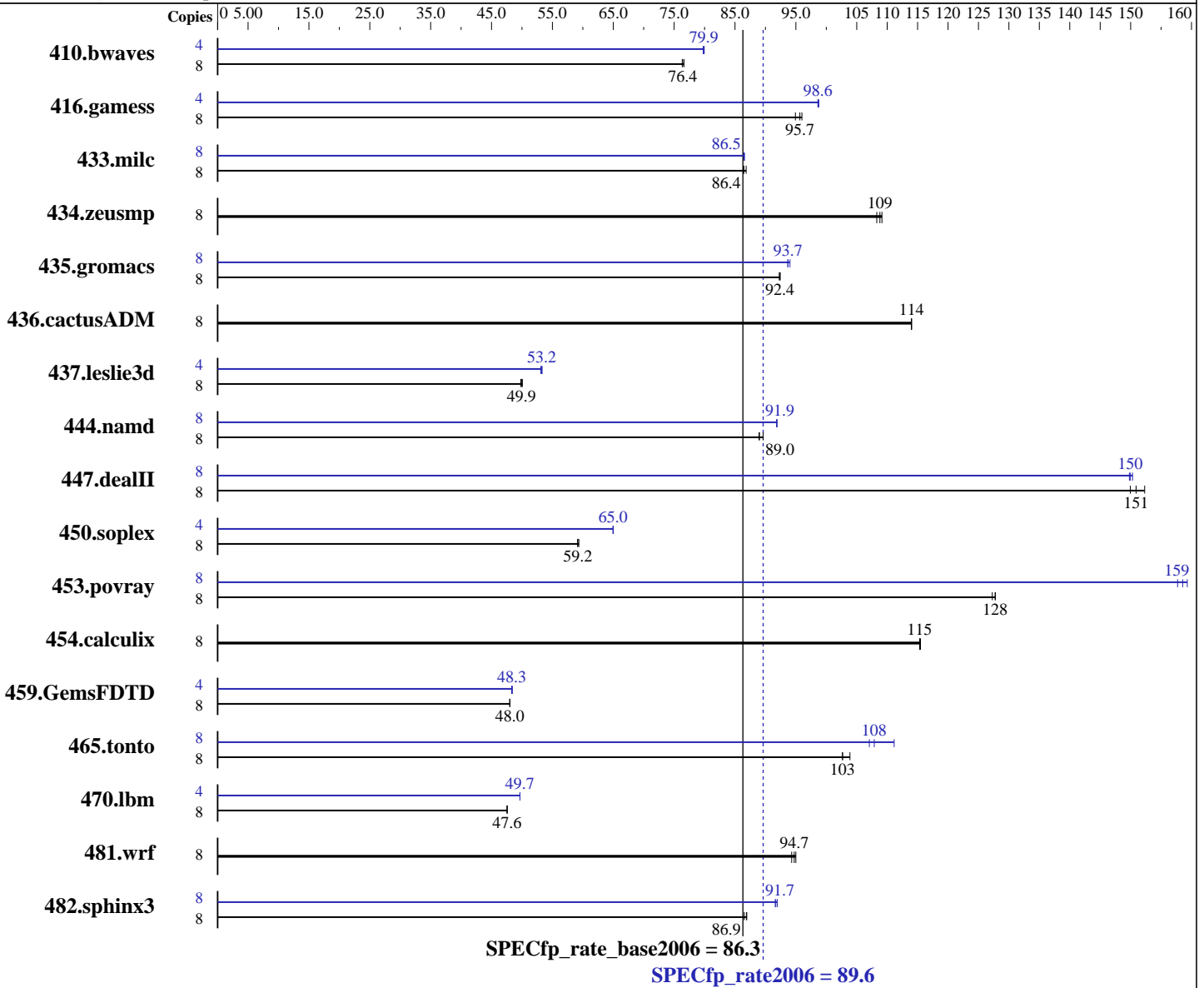
Test date: May-2011

Test sponsor: Supermicro

Hardware Availability: Jan-2010

Tested by: Supermicro

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon X3470  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2933  
 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: No  
 File System: ext3  
 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 2Rx8 PC3-10600R-9, ECC)  
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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	<b><u>1423</u></b>	<b><u>76.4</u></b>	1424	76.3	1419	76.6	4	681	79.8	680	79.9	<b><u>680</u></b>	<b><u>79.9</u></b>
416.gamess	8	<b><u>1638</u></b>	<b><u>95.7</u></b>	1632	96.0	1650	94.9	4	793	98.8	<b><u>794</u></b>	<b><u>98.6</u></b>	794	98.6
433.milc	8	850	86.4	<b><u>850</u></b>	<b><u>86.4</u></b>	846	86.8	8	<b><u>849</u></b>	<b><u>86.5</u></b>	849	86.5	849	86.5
434.zeusmp	8	667	109	672	108	<b><u>669</u></b>	<b><u>109</u></b>	8	667	109	672	108	<b><u>669</u></b>	<b><u>109</u></b>
435.gromacs	8	618	92.4	<b><u>618</u></b>	<b><u>92.4</u></b>	619	92.3	8	607	94.0	<b><u>609</u></b>	<b><u>93.7</u></b>	610	93.7
436.cactusADM	8	838	114	<b><u>839</u></b>	<b><u>114</u></b>	839	114	8	838	114	<b><u>839</u></b>	<b><u>114</u></b>	839	114
437.leslie3d	8	1502	50.1	1510	49.8	<b><u>1506</u></b>	<b><u>49.9</u></b>	4	708	53.1	<b><u>706</u></b>	<b><u>53.2</u></b>	705	53.3
444.namd	8	721	89.0	<b><u>721</u></b>	<b><u>89.0</u></b>	716	89.6	8	698	91.9	699	91.8	<b><u>698</u></b>	<b><u>91.9</u></b>
447.dealII	8	<b><u>607</u></b>	<b><u>151</u></b>	601	152	610	150	8	611	150	609	150	<b><u>610</u></b>	<b><u>150</u></b>
450.soplex	8	<b><u>1127</u></b>	<b><u>59.2</u></b>	1128	59.1	1124	59.3	4	<b><u>513</u></b>	<b><u>65.0</u></b>	513	65.0	514	64.9
453.povray	8	333	128	334	127	<b><u>333</u></b>	<b><u>128</u></b>	8	270	158	267	159	<b><u>268</u></b>	<b><u>159</u></b>
454.calculix	8	572	115	572	115	<b><u>572</u></b>	<b><u>115</u></b>	8	572	115	572	115	<b><u>572</u></b>	<b><u>115</u></b>
459.GemsFDTD	8	<b><u>1768</u></b>	<b><u>48.0</u></b>	1768	48.0	1768	48.0	4	878	48.3	<b><u>878</u></b>	<b><u>48.3</u></b>	877	48.4
465.tonto	8	767	103	<b><u>767</u></b>	<b><u>103</u></b>	758	104	8	<b><u>730</u></b>	<b><u>108</u></b>	735	107	708	111
470.lbm	8	<b><u>2311</u></b>	<b><u>47.6</u></b>	2312	47.5	2311	47.6	4	1107	49.7	1106	49.7	<b><u>1106</u></b>	<b><u>49.7</u></b>
481.wrf	8	948	94.3	<b><u>943</u></b>	<b><u>94.7</u></b>	941	95.0	8	948	94.3	<b><u>943</u></b>	<b><u>94.7</u></b>	941	95.0
482.sphinx3	8	1794	86.9	1802	86.5	<b><u>1794</u></b>	<b><u>86.9</u></b>	8	<b><u>1700</u></b>	<b><u>91.7</u></b>	1702	91.6	1696	91.9

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

## Submit Notes

The config file option 'submit' was used.  
numactl was used to bind copies to the cores

## Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

## Platform Notes

Fan speed set to Full Speed in BIOS Setup.  
As tested, the system used a Supermicro CSE-111T-560CB chassis.  
The system includes a PWS-562-1H power supply, SNK-P0046P heatsink,  
and 4 FAN-0106L4 cooling fans.



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CPU2006 license: 001176  
Test sponsor: Supermicro  
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Test date: May-2011  
Hardware Availability: Jan-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

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

Continued on next page



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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m64  
  
482.sphinx3: icc -m32  
  
C++ benchmarks (except as noted below):  
icpc -m64  
  
450.soplex: icpc -m32  
  
Fortran benchmarks:  
ifort -m64  
  
Benchmarks using both Fortran and C:  
icc -m64 ifort -m64

## Peak 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.deallI: -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

## Peak Optimization Flags

C benchmarks:

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## Peak Optimization Flags (Continued)

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)  
-fno-alias -opt-prefetch

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)  
-opt-malloc-options=3 -ansi-alias -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -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.dealII: -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-

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

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

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: -xSSE4.2 -ipo -O3 -no-prec-div -static

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

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)  
-unroll4 -auto -inline-calloc -opt-malloc-options=3

### Benchmarks using both Fortran and C:

Continued on next page



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## Peak Optimization Flags (Continued)

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: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

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>

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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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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