



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

### SPECfp<sup>®</sup>\_rate2006 = 92.9

Motherboard X8SIT-F (Intel Xeon X3480, 3.06 GHz)

### SPECfp\_rate\_base2006 = 89.6

CPU2006 license: 001176

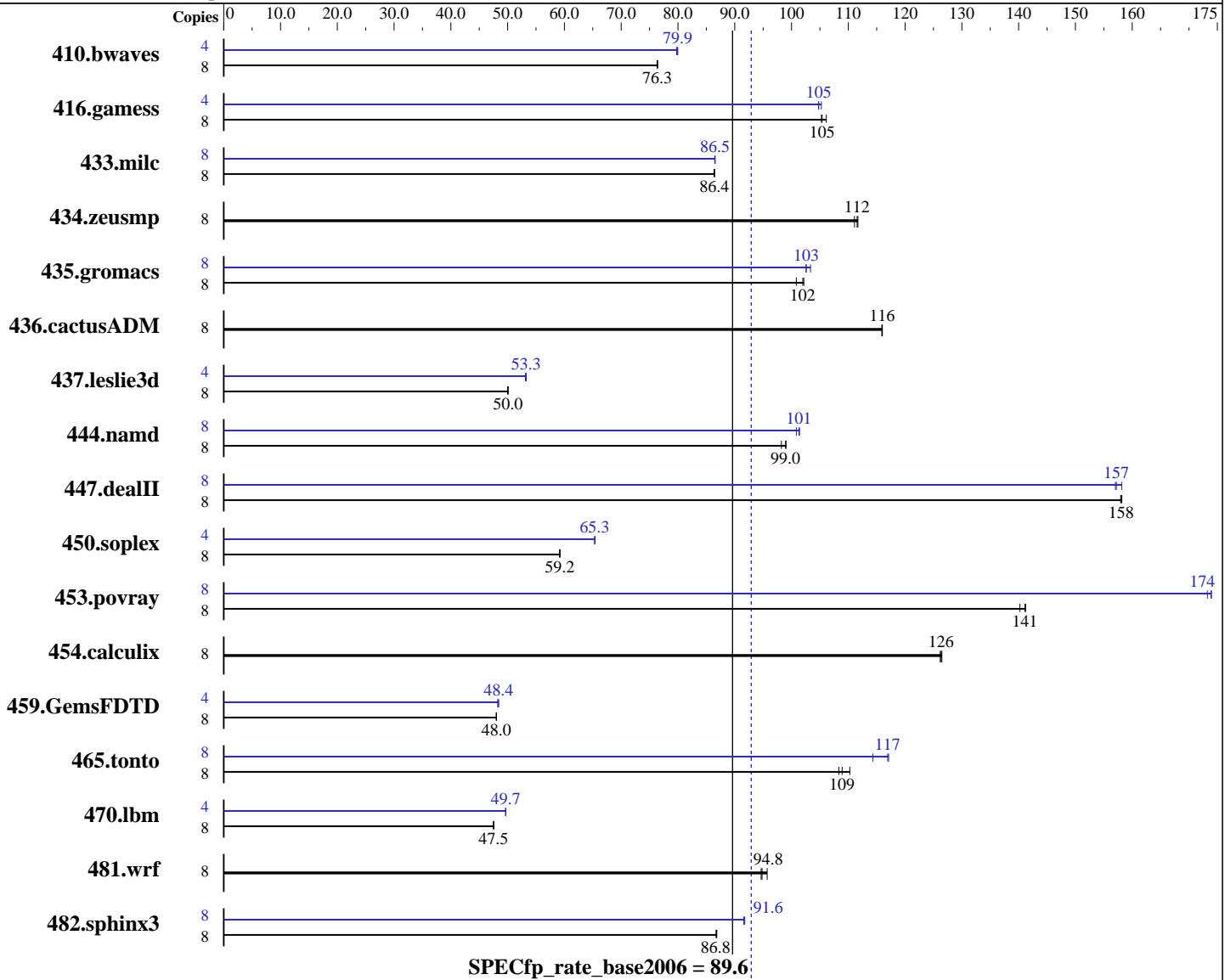
Test date: Aug-2010

Test sponsor: Supermicro

Hardware Availability: Jun-2010

Tested by: Supermicro

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon X3480  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.73 GHz  
 CPU MHz: 3067  
 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 DDR3-1333 RDIMM, ECC, CL9)  
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   |             |             |             |             |            |             |
|---------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|------------|-------------|
|               | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds    | Ratio       |
| 410.bwaves    | 8      | 1422        | 76.4        | 1425        | 76.3        | <b>1424</b> | <b>76.3</b> | 4      | 681         | 79.8        | 680         | 80.0        | <b>680</b> | <b>79.9</b> |
| 416.gamess    | 8      | <b>1486</b> | <b>105</b>  | 1476        | 106         | 1488        | 105         | 4      | 748         | 105         | 744         | 105         | <b>747</b> | <b>105</b>  |
| 433.milc      | 8      | 850         | 86.4        | <b>850</b>  | <b>86.4</b> | 850         | 86.4        | 8      | 849         | 86.5        | 849         | 86.5        | <b>849</b> | <b>86.5</b> |
| 434.zeusmp    | 8      | 655         | 111         | 652         | 112         | <b>653</b>  | <b>112</b>  | 8      | 655         | 111         | 652         | 112         | <b>653</b> | <b>112</b>  |
| 435.gromacs   | 8      | 559         | 102         | <b>560</b>  | <b>102</b>  | 566         | 101         | 8      | <b>557</b>  | <b>103</b>  | 557         | 103         | 553        | 103         |
| 436.cactusADM | 8      | <b>824</b>  | <b>116</b>  | 824         | 116         | 825         | 116         | 8      | <b>824</b>  | <b>116</b>  | 824         | 116         | 825        | 116         |
| 437.leslie3d  | 8      | 1501        | 50.1        | <b>1502</b> | <b>50.0</b> | 1504        | 50.0        | 4      | 708         | 53.1        | <b>706</b>  | <b>53.3</b> | 706        | 53.3        |
| 444.namd      | 8      | <b>648</b>  | <b>99.0</b> | 648         | 99.0        | 653         | 98.2        | 8      | 636         | 101         | 633         | 101         | <b>633</b> | <b>101</b>  |
| 447.dealII    | 8      | 579         | 158         | 579         | 158         | <b>579</b>  | <b>158</b>  | 8      | 583         | 157         | <b>582</b>  | <b>157</b>  | 579        | 158         |
| 450.soplex    | 8      | 1127        | 59.2        | 1127        | 59.2        | <b>1127</b> | <b>59.2</b> | 4      | 510         | 65.4        | 511         | 65.3        | <b>511</b> | <b>65.3</b> |
| 453.povray    | 8      | 304         | 140         | 301         | 141         | <b>302</b>  | <b>141</b>  | 8      | <b>245</b>  | <b>174</b>  | 245         | 174         | 246        | 173         |
| 454.calculix  | 8      | 522         | 126         | <b>522</b>  | <b>126</b>  | 523         | 126         | 8      | 522         | 126         | <b>522</b>  | <b>126</b>  | 523        | 126         |
| 459.GemsFDTD  | 8      | <b>1768</b> | <b>48.0</b> | 1768        | 48.0        | 1767        | 48.0        | 4      | 880         | 48.2        | 877         | 48.4        | <b>877</b> | <b>48.4</b> |
| 465.tonto     | 8      | 714         | 110         | 727         | 108         | <b>723</b>  | <b>109</b>  | 8      | <b>673</b>  | <b>117</b>  | 672         | 117         | 689        | 114         |
| 470.lbm       | 8      | 2312        | 47.5        | 2313        | 47.5        | <b>2313</b> | <b>47.5</b> | 4      | 1106        | 49.7        | <b>1107</b> | <b>49.7</b> | 1107       | 49.6        |
| 481.wrf       | 8      | 944         | 94.6        | 934         | 95.7        | <b>943</b>  | <b>94.8</b> | 8      | 944         | 94.6        | 934         | 95.7        | <b>943</b> | <b>94.8</b> |
| 482.sphinx3   | 8      | 1795        | 86.8        | 1798        | 86.7        | <b>1797</b> | <b>86.8</b> | 8      | <b>1701</b> | <b>91.6</b> | 1699        | 91.8        | 1702       | 91.6        |

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-827H-R920B chassis.  
The chassis is bundled with a PWS-920P-1R power supply, SNK-P0046P heatsink,  
and 4 FAN-001111L4 cooling fans.



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**CPU2006 license:** 001176  
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**Test date:** Aug-2010  
**Hardware Availability:** Jun-2010  
**Software Availability:** Jan-2010

## 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

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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:

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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.20100915.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.20100915.xml>

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

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