



# SPEC® CFP2006 Result

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## Supermicro

### SPECfp®\_rate2006 = 51.7

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

### SPECfp\_rate\_base2006 = 50.3

CPU2006 license: 001176

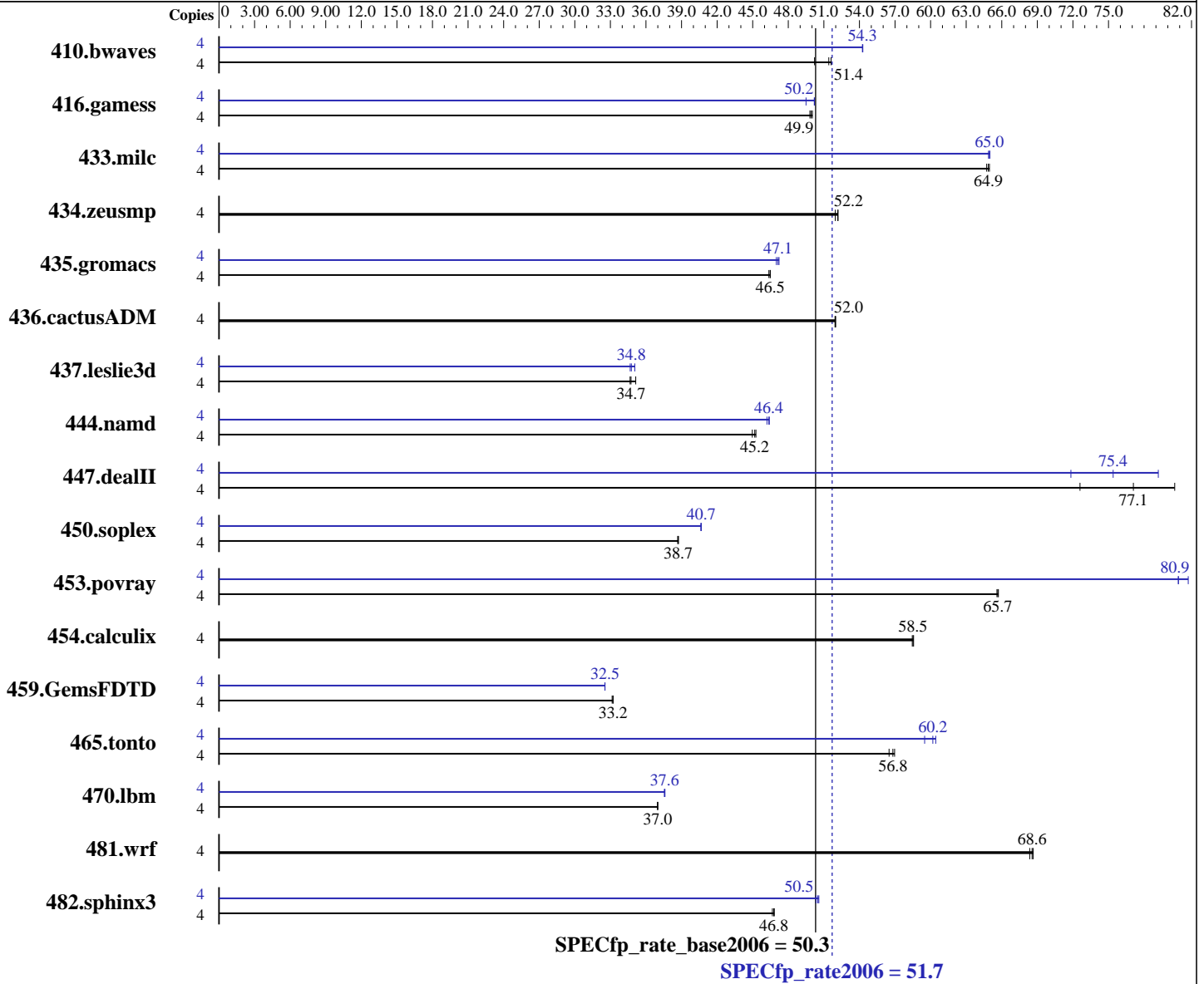
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2010

Hardware Availability: Apr-2010

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Core i3-540  
 CPU Characteristics: 3067  
 CPU MHz: Integrated  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 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

Continued on next page

### 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: 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   |                    |                    |                    |                    |                    |                    |
|---------------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|               | Copies | Seconds            | Ratio              | Seconds            | Ratio              | Seconds            | Ratio              | Copies | Seconds            | Ratio              | Seconds            | Ratio              | Seconds            | Ratio              |
| 410.bwaves    | 4      | 1083               | 50.2               | <b><u>1057</u></b> | <b><u>51.4</u></b> | 1053               | 51.6               | 4      | 1001               | 54.3               | <b><u>1002</u></b> | <b><u>54.3</u></b> | 1002               | 54.3               |
| 416.gamess    | 4      | 1565               | 50.0               | <b><u>1569</u></b> | <b><u>49.9</u></b> | 1572               | 49.8               | 4      | 1560               | 50.2               | 1582               | 49.5               | <b><u>1560</u></b> | <b><u>50.2</u></b> |
| 433.milc      | 4      | 567                | 64.7               | <b><u>566</u></b>  | <b><u>64.9</u></b> | 565                | 65.0               | 4      | 565                | 65.0               | <b><u>565</u></b>  | <b><u>65.0</u></b> | 566                | 64.9               |
| 434.zeusmp    | 4      | 701                | 52.0               | 697                | 52.2               | <b><u>698</u></b>  | <b><u>52.2</u></b> | 4      | 701                | 52.0               | 697                | 52.2               | <b><u>698</u></b>  | <b><u>52.2</u></b> |
| 435.gromacs   | 4      | <b><u>615</u></b>  | <b><u>46.5</u></b> | 614                | 46.5               | 616                | 46.4               | 4      | <b><u>606</u></b>  | <b><u>47.1</u></b> | 608                | 47.0               | 605                | 47.2               |
| 436.cactusADM | 4      | 919                | 52.0               | 920                | 51.9               | <b><u>920</u></b>  | <b><u>52.0</u></b> | 4      | 919                | 52.0               | 920                | 51.9               | <b><u>920</u></b>  | <b><u>52.0</u></b> |
| 437.leslie3d  | 4      | 1070               | 35.1               | <b><u>1082</u></b> | <b><u>34.7</u></b> | 1085               | 34.7               | 4      | 1084               | 34.7               | 1072               | 35.1               | <b><u>1081</u></b> | <b><u>34.8</u></b> |
| 444.namd      | 4      | 709                | 45.3               | <b><u>710</u></b>  | <b><u>45.2</u></b> | 713                | 45.0               | 4      | 691                | 46.4               | <b><u>692</u></b>  | <b><u>46.4</u></b> | 694                | 46.2               |
| 447.dealII    | 4      | 568                | 80.6               | 630                | 72.6               | <b><u>594</u></b>  | <b><u>77.1</u></b> | 4      | 637                | 71.8               | 578                | 79.2               | <b><u>607</u></b>  | <b><u>75.4</u></b> |
| 450.soplex    | 4      | 861                | 38.7               | 863                | 38.7               | <b><u>861</u></b>  | <b><u>38.7</u></b> | 4      | 820                | 40.7               | <b><u>821</u></b>  | <b><u>40.7</u></b> | 821                | 40.6               |
| 453.povray    | 4      | 324                | 65.6               | 324                | 65.7               | <b><u>324</u></b>  | <b><u>65.7</u></b> | 4      | <b><u>263</u></b>  | <b><u>80.9</u></b> | 260                | 81.7               | 263                | 80.9               |
| 454.calculix  | 4      | 563                | 58.6               | 565                | 58.5               | <b><u>564</u></b>  | <b><u>58.5</u></b> | 4      | 563                | 58.6               | 565                | 58.5               | <b><u>564</u></b>  | <b><u>58.5</u></b> |
| 459.GemsFDTD  | 4      | 1280               | 33.1               | 1277               | 33.2               | <b><u>1278</u></b> | <b><u>33.2</u></b> | 4      | <b><u>1304</u></b> | <b><u>32.5</u></b> | 1304               | 32.5               | 1304               | 32.5               |
| 465.tonto     | 4      | 691                | 57.0               | 697                | 56.5               | <b><u>693</u></b>  | <b><u>56.8</u></b> | 4      | 662                | 59.5               | 651                | 60.4               | <b><u>654</u></b>  | <b><u>60.2</u></b> |
| 470.lbm       | 4      | 1485               | 37.0               | <b><u>1486</u></b> | <b><u>37.0</u></b> | 1486               | 37.0               | 4      | 1462               | 37.6               | <b><u>1463</u></b> | <b><u>37.6</u></b> | 1463               | 37.6               |
| 481.wrf       | 4      | 651                | 68.7               | <b><u>652</u></b>  | <b><u>68.6</u></b> | 654                | 68.4               | 4      | 651                | 68.7               | <b><u>652</u></b>  | <b><u>68.6</u></b> | 654                | 68.4               |
| 482.sphinx3   | 4      | <b><u>1667</u></b> | <b><u>46.8</u></b> | 1665               | 46.8               | 1671               | 46.7               | 4      | 1541               | 50.6               | <b><u>1544</u></b> | <b><u>50.5</u></b> | 1548               | 50.3               |

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-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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CPU2006 license: 001176  
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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

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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**Test sponsor:** Supermicro

**Hardware Availability:** Apr-2010

**Tested by:** Supermicro

**Software Availability:** Jan-2010

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

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