



SPEC[®] CFP2006 Result

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Supermicro

SPECfp[®]_rate2006 = 92.9

Motherboard X8SIE-F (Intel Xeon X3480, 3.06 GHz)

SPECfp_rate_base2006 = 89.9

CPU2006 license: 001176

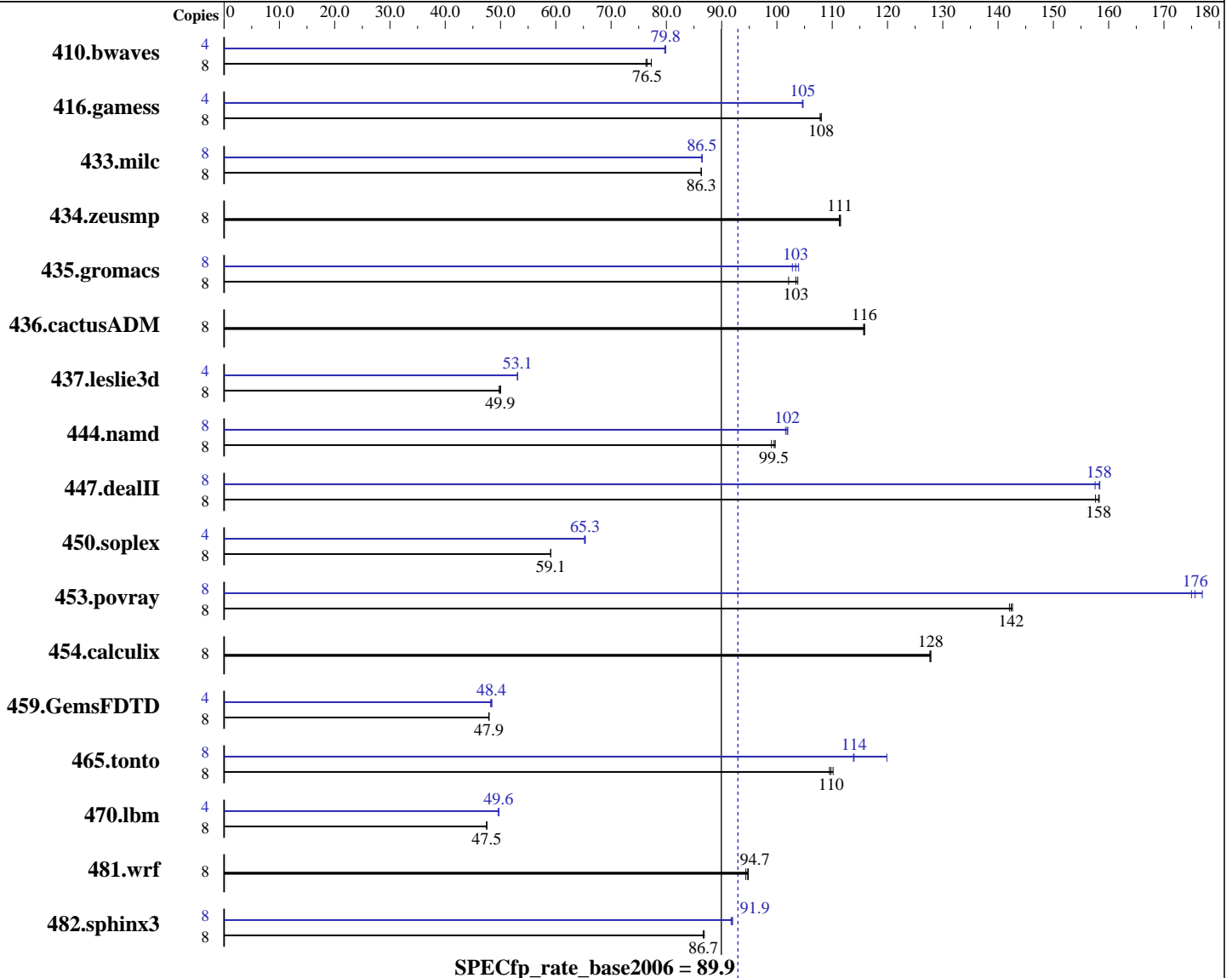
Test date: Oct-2010

Test sponsor: Supermicro

Hardware Availability: Jun-2010

Tested by: Supermicro

Software Availability: Jan-2010



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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 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 | 1425 | 76.3 | <u>1421</u> | <u>76.5</u> | 1407 | 77.3 | 4 | 682 | 79.7 | 681 | 79.9 | <u>681</u> | <u>79.8</u> |
| 416.gamess | 8 | <u>1450</u> | <u>108</u> | 1453 | 108 | 1450 | 108 | 4 | <u>748</u> | <u>105</u> | 748 | 105 | 749 | 105 |
| 433.milc | 8 | 851 | 86.3 | 850 | 86.4 | <u>851</u> | <u>86.3</u> | 8 | 850 | 86.4 | <u>849</u> | <u>86.5</u> | 849 | 86.5 |
| 434.zeusmp | 8 | 654 | 111 | <u>653</u> | <u>111</u> | 653 | 112 | 8 | 654 | 111 | <u>653</u> | <u>111</u> | 653 | 112 |
| 435.gromacs | 8 | 550 | 104 | 559 | 102 | <u>552</u> | <u>103</u> | 8 | 556 | 103 | <u>553</u> | <u>103</u> | 550 | 104 |
| 436.cactusADM | 8 | 826 | 116 | <u>826</u> | <u>116</u> | 825 | 116 | 8 | 826 | 116 | <u>826</u> | <u>116</u> | 825 | 116 |
| 437.leslie3d | 8 | 1503 | 50.0 | 1511 | 49.8 | <u>1506</u> | <u>49.9</u> | 4 | <u>708</u> | <u>53.1</u> | 708 | 53.1 | 709 | 53.1 |
| 444.namd | 8 | <u>645</u> | <u>99.5</u> | 648 | 99.0 | 644 | 99.7 | 8 | 629 | 102 | <u>630</u> | <u>102</u> | 632 | 102 |
| 447.dealII | 8 | 578 | 158 | <u>579</u> | <u>158</u> | 581 | 158 | 8 | 581 | 158 | <u>578</u> | <u>158</u> | 578 | 158 |
| 450.soplex | 8 | <u>1129</u> | <u>59.1</u> | 1129 | 59.1 | 1129 | 59.1 | 4 | 512 | 65.2 | 511 | 65.3 | <u>511</u> | <u>65.3</u> |
| 453.povray | 8 | <u>299</u> | <u>142</u> | 300 | 142 | 298 | 143 | 8 | 241 | 177 | <u>242</u> | <u>176</u> | 243 | 175 |
| 454.calculix | 8 | 516 | 128 | <u>516</u> | <u>128</u> | 517 | 128 | 8 | 516 | 128 | <u>516</u> | <u>128</u> | 517 | 128 |
| 459.GemsFDTD | 8 | <u>1772</u> | <u>47.9</u> | 1771 | 47.9 | 1772 | 47.9 | 4 | 876 | 48.4 | <u>877</u> | <u>48.4</u> | 880 | 48.2 |
| 465.tonto | 8 | 719 | 109 | 715 | 110 | <u>717</u> | <u>110</u> | 8 | <u>691</u> | <u>114</u> | 657 | 120 | 692 | 114 |
| 470.lbm | 8 | 2313 | 47.5 | 2314 | 47.5 | <u>2314</u> | <u>47.5</u> | 4 | 1106 | 49.7 | <u>1107</u> | <u>49.6</u> | 1107 | 49.6 |
| 481.wrf | 8 | <u>944</u> | <u>94.7</u> | 947 | 94.4 | 943 | 94.8 | 8 | <u>944</u> | <u>94.7</u> | 947 | 94.4 | 943 | 94.8 |
| 482.sphinx3 | 8 | <u>1799</u> | <u>86.7</u> | 1799 | 86.7 | 1795 | 86.9 | 8 | <u>1696</u> | <u>91.9</u> | 1700 | 91.7 | 1696 | 92.0 |

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-813MTQ-280C chassis.
The chassis is bundled with a PWS-281-1H power supply, SNK-P0046P heatsink,
and 4 FAN-0061L4 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

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.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.

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