



SPEC[®] CFP2006 Result

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Supermicro

SuperServer 5018D-MTRF (X10SLM-F, Intel Xeon E3-1240 v3, 3.40 GHz)

SPECfp[®]_rate2006 = 149

SPECfp_rate_base2006 = 144

CPU2006 license: 001176

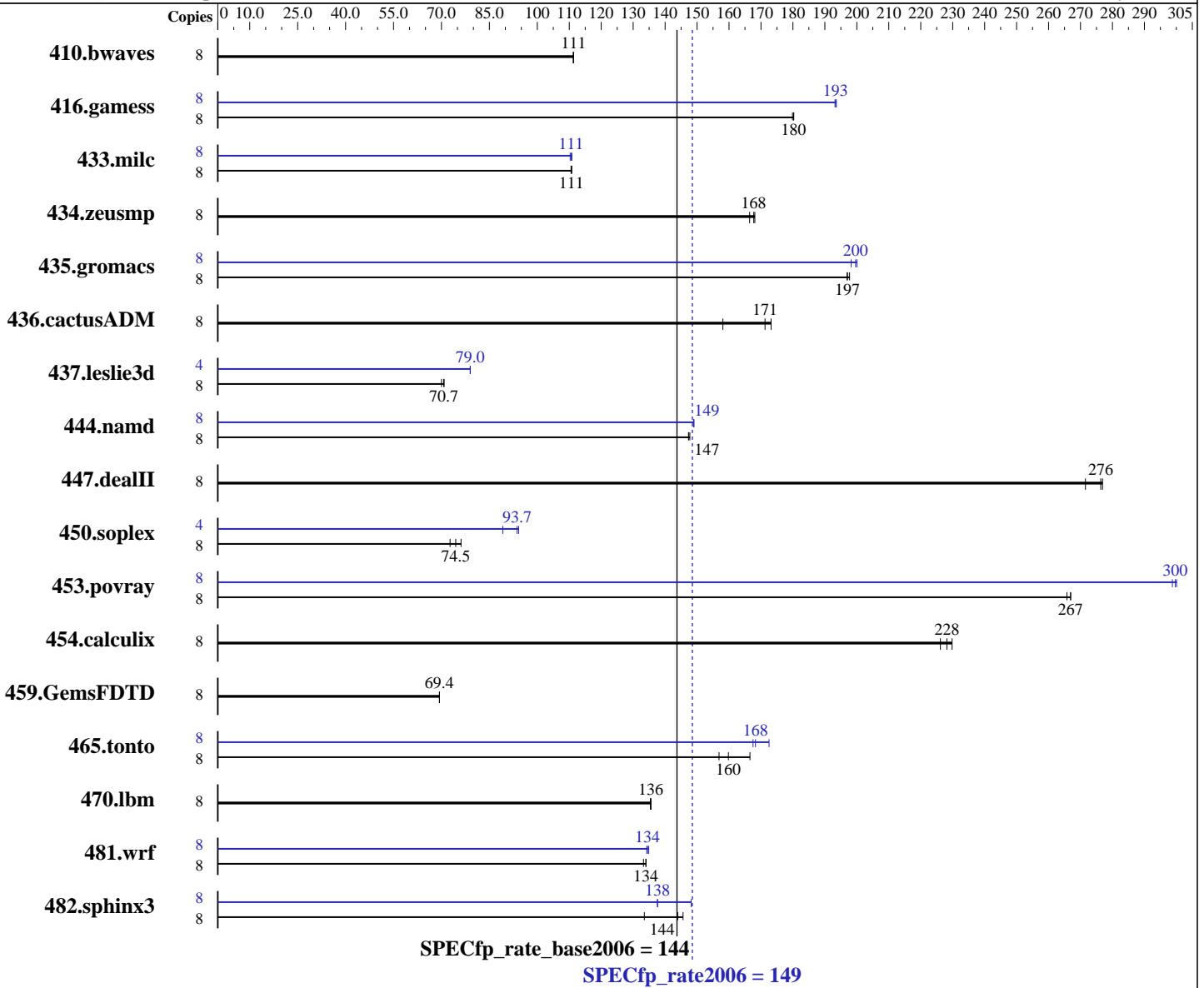
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2013

Hardware Availability: Jun-2013

Software Availability: May-2013



Hardware

CPU Name: Intel Xeon E3-1240 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
 CPU MHz: 3400
 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: Red Hat Enterprise Linux Server release 6.4, Kernel 2.6.32-358.el6.x86_64
 Compiler: C/C++: Version 13.1.1.163 of Intel C++ Studio XE for Linux;
 Fortran: Version 13.1.1.163 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: ext4
 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: 32 GB (4 x 8 GB 2Rx4 PC3-12800E-11, ECC)
Disk Subsystem: 1 x 2000 GB SATA II, 7200 RPM
Other Hardware: None

Base Pointers: 32/64-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 | 976 | 111 | 977 | 111 | 976 | 111 | 8 | 976 | 111 | 977 | 111 | 976 | 111 |
| 416.gamess | 8 | 869 | 180 | 869 | 180 | 871 | 180 | 8 | 809 | 194 | 810 | 193 | 811 | 193 |
| 433.milc | 8 | 663 | 111 | 663 | 111 | 664 | 111 | 8 | 664 | 111 | 663 | 111 | 666 | 110 |
| 434.zeusmp | 8 | 434 | 168 | 437 | 166 | 433 | 168 | 8 | 434 | 168 | 437 | 166 | 433 | 168 |
| 435.gromacs | 8 | 290 | 197 | 289 | 198 | 290 | 197 | 8 | 288 | 198 | 285 | 200 | 286 | 200 |
| 436.cactusADM | 8 | 558 | 171 | 605 | 158 | 552 | 173 | 8 | 558 | 171 | 605 | 158 | 552 | 173 |
| 437.leslie3d | 8 | 1061 | 70.8 | 1063 | 70.7 | 1074 | 70.0 | 4 | 476 | 79.0 | 476 | 79.0 | 476 | 79.0 |
| 444.namd | 8 | 436 | 147 | 434 | 148 | 435 | 147 | 8 | 431 | 149 | 431 | 149 | 431 | 149 |
| 447.dealII | 8 | 331 | 277 | 331 | 276 | 337 | 272 | 8 | 331 | 277 | 331 | 276 | 337 | 272 |
| 450.soplex | 8 | 918 | 72.7 | 876 | 76.1 | 896 | 74.5 | 4 | 356 | 93.7 | 354 | 94.2 | 374 | 89.2 |
| 453.povray | 8 | 159 | 267 | 159 | 267 | 160 | 266 | 8 | 142 | 300 | 142 | 300 | 142 | 299 |
| 454.calculix | 8 | 292 | 226 | 287 | 230 | 289 | 228 | 8 | 292 | 226 | 287 | 230 | 289 | 228 |
| 459.GemsFDTD | 8 | 1223 | 69.4 | 1224 | 69.4 | 1223 | 69.4 | 8 | 1223 | 69.4 | 1224 | 69.4 | 1223 | 69.4 |
| 465.tonto | 8 | 502 | 157 | 473 | 167 | 493 | 160 | 8 | 470 | 168 | 456 | 173 | 468 | 168 |
| 470.lbm | 8 | 812 | 135 | 811 | 136 | 811 | 136 | 8 | 812 | 135 | 811 | 136 | 811 | 136 |
| 481.wrf | 8 | 667 | 134 | 667 | 134 | 671 | 133 | 8 | 666 | 134 | 663 | 135 | 664 | 134 |
| 482.sphinx3 | 8 | 1168 | 133 | 1083 | 144 | 1071 | 146 | 8 | 1052 | 148 | 1133 | 138 | 1133 | 138 |

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

Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

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General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

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Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

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.dealII: -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

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Peak Portability Flags (Continued)

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -static
-auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
-unroll2

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-alloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch

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Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
-auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-prefetch -static -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -ipo -O3 -no-prec-div -static -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.html>
<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130702.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.xml>
<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130702.xml>

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For other inquiries, please contact webmaster@spec.org.

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