



SPEC[®] CFP2006 Result

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Supermicro

SPECfp[®]2006 = 81.8

SuperServer 5037A-i (X9SRA, Intel Xeon E5-1650)

SPECfp_base2006 = 78.8

CPU2006 license: 001176

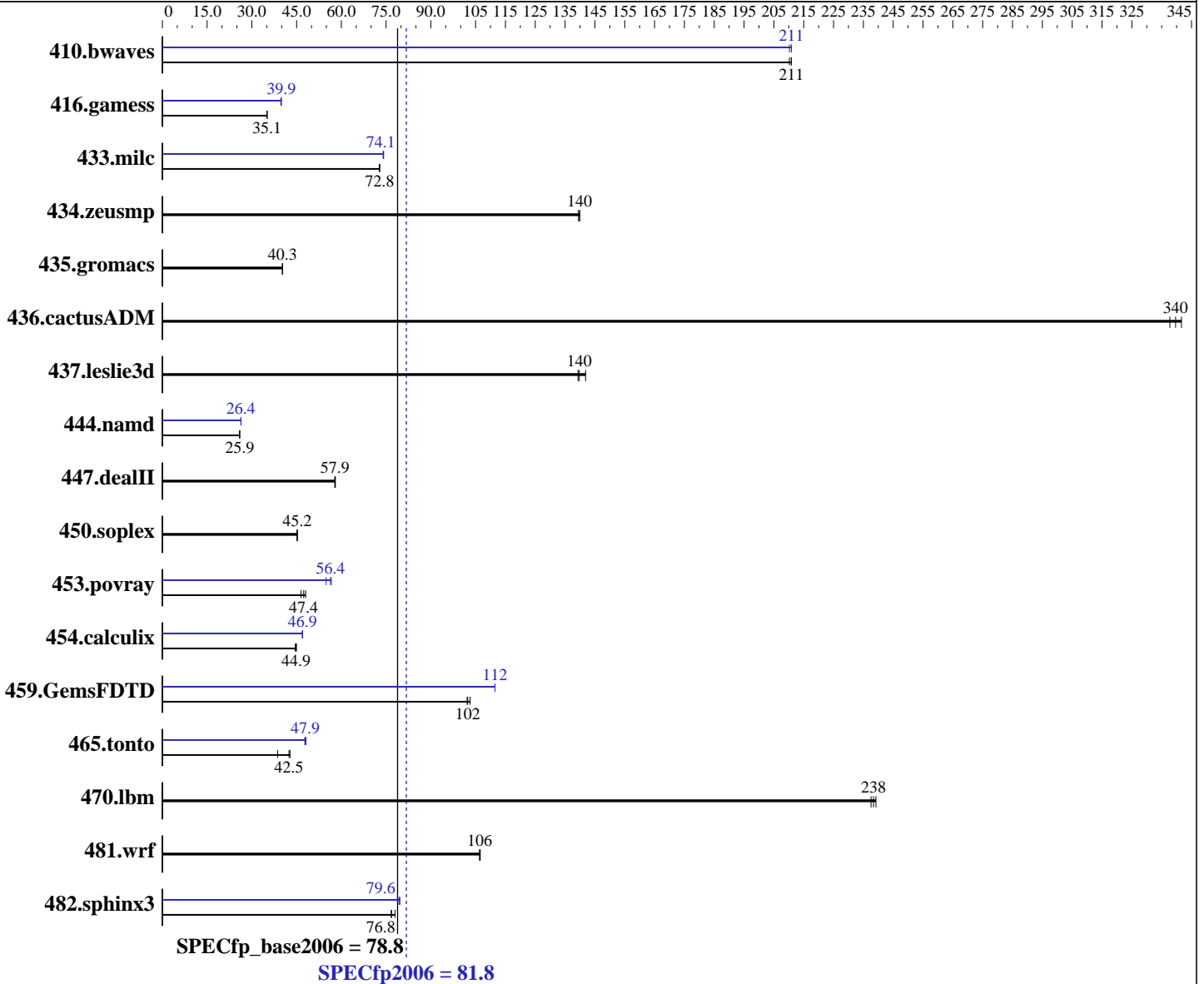
Test date: May-2012

Test sponsor: Supermicro

Hardware Availability: Mar-2012

Tested by: Supermicro

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E5-1650
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
 CPU MHz: 3200
 FPU: Integrated
 CPU(s) enabled: 6 cores, 1 chip, 6 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 6.2, Kernel 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 3 (multi-user)

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 300 GB SATA II, 10000 RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 64.7 | 210 | 64.5 | 211 | 64.5 | 211 | 64.5 | 211 | 64.5 | 211 | 64.7 | 210 |
| 416.gamess | 558 | 35.1 | 557 | 35.2 | 559 | 35.0 | 493 | 39.7 | 491 | 39.9 | 491 | 39.9 |
| 433.milc | 126 | 72.8 | 126 | 72.7 | 126 | 72.8 | 124 | 74.0 | 124 | 74.2 | 124 | 74.1 |
| 434.zeusmp | 65.2 | 139 | 65.0 | 140 | 65.0 | 140 | 65.2 | 139 | 65.0 | 140 | 65.0 | 140 |
| 435.gromacs | 177 | 40.3 | 177 | 40.3 | 177 | 40.3 | 177 | 40.3 | 177 | 40.3 | 177 | 40.3 |
| 436.cactusADM | 35.0 | 342 | 35.2 | 340 | 35.4 | 338 | 35.0 | 342 | 35.2 | 340 | 35.4 | 338 |
| 437.leslie3d | 67.3 | 140 | 66.3 | 142 | 67.5 | 139 | 67.3 | 140 | 66.3 | 142 | 67.5 | 139 |
| 444.namd | 310 | 25.9 | 309 | 25.9 | 309 | 25.9 | 304 | 26.4 | 304 | 26.3 | 304 | 26.4 |
| 447.dealII | 198 | 57.9 | 198 | 57.8 | 197 | 58.0 | 198 | 57.9 | 198 | 57.8 | 197 | 58.0 |
| 450.soplex | 185 | 45.2 | 184 | 45.2 | 184 | 45.2 | 185 | 45.2 | 184 | 45.2 | 184 | 45.2 |
| 453.povray | 112 | 47.4 | 111 | 48.0 | 114 | 46.5 | 93.9 | 56.6 | 96.9 | 54.9 | 94.4 | 56.4 |
| 454.calculix | 184 | 44.9 | 185 | 44.5 | 184 | 44.9 | 176 | 47.0 | 176 | 46.9 | 176 | 46.9 |
| 459.GemsFDTD | 103 | 103 | 104 | 102 | 104 | 102 | 95.2 | 112 | 95.2 | 112 | 95.2 | 112 |
| 465.tonto | 232 | 42.5 | 255 | 38.6 | 230 | 42.8 | 205 | 47.9 | 204 | 48.2 | 206 | 47.8 |
| 470.lbm | 57.4 | 239 | 57.6 | 238 | 57.8 | 238 | 57.4 | 239 | 57.6 | 238 | 57.8 | 238 |
| 481.wrf | 105 | 106 | 105 | 107 | 105 | 106 | 105 | 106 | 105 | 107 | 105 | 106 |
| 482.sphinx3 | 250 | 78.0 | 254 | 76.8 | 254 | 76.7 | 246 | 79.3 | 245 | 79.6 | 245 | 79.6 |

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"
OMP_NUM_THREADS = "6"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5



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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.lelie3d: -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:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias



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Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

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Peak Optimization Flags (Continued)

416.gamess: -xAVX(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: basepeak = yes

459.GemsFDTD: -xAVX(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 -opt-prefetch -parallel

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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic12.1-official-linux64.20111122.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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

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