



SPEC[®] CFP2006 Result

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Supermicro

SuperServer 6017R-TDF (X9DRD-iF, Intel Xeon E5-2630L)

SPECfp[®]2006 = 64.6

SPECfp_base2006 = 61.5

CPU2006 license: 001176

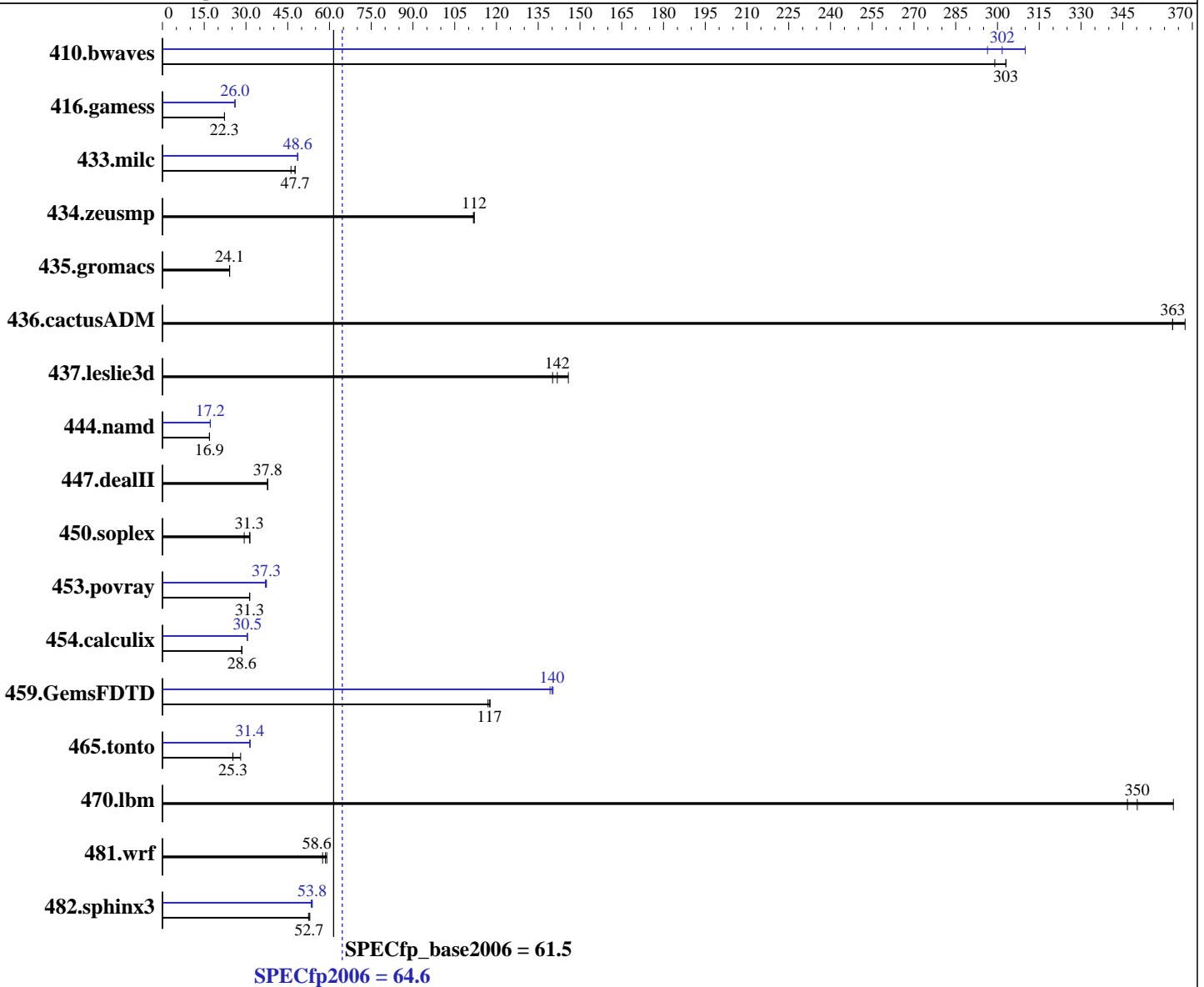
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Apr-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E5-2630L
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 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: 15 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)
Disk Subsystem: 1 x 600 GB SATA III, 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 | 44.8 | 303 | 44.8 | 303 | 45.4 | 299 | 43.8 | 310 | 45.0 | 302 | 45.8 | 296 |
| 416.gamess | 879 | 22.3 | 878 | 22.3 | 879 | 22.3 | 752 | 26.0 | 752 | 26.0 | 751 | 26.1 |
| 433.milc | 199 | 46.2 | 193 | 47.7 | 193 | 47.7 | 189 | 48.7 | 189 | 48.6 | 189 | 48.5 |
| 434.zeusmp | 81.5 | 112 | 81.3 | 112 | 81.3 | 112 | 81.5 | 112 | 81.3 | 112 | 81.3 | 112 |
| 435.gromacs | 296 | 24.2 | 296 | 24.1 | 296 | 24.1 | 296 | 24.2 | 296 | 24.1 | 296 | 24.1 |
| 436.cactusADM | 32.9 | 363 | 32.5 | 367 | 32.9 | 363 | 32.9 | 363 | 32.5 | 367 | 32.9 | 363 |
| 437.leslie3d | 67.1 | 140 | 66.3 | 142 | 64.5 | 146 | 67.1 | 140 | 66.3 | 142 | 64.5 | 146 |
| 444.namd | 475 | 16.9 | 475 | 16.9 | 475 | 16.9 | 467 | 17.2 | 467 | 17.2 | 466 | 17.2 |
| 447.dealII | 303 | 37.7 | 302 | 37.9 | 303 | 37.8 | 303 | 37.7 | 302 | 37.9 | 303 | 37.8 |
| 450.soplex | 265 | 31.4 | 284 | 29.4 | 267 | 31.3 | 265 | 31.4 | 284 | 29.4 | 267 | 31.3 |
| 453.povray | 170 | 31.3 | 170 | 31.3 | 170 | 31.4 | 143 | 37.3 | 142 | 37.4 | 144 | 37.0 |
| 454.calculix | 290 | 28.4 | 289 | 28.6 | 289 | 28.6 | 271 | 30.5 | 270 | 30.5 | 270 | 30.5 |
| 459.GemsFDTD | 90.7 | 117 | 90.1 | 118 | 90.3 | 117 | 75.8 | 140 | 76.2 | 139 | 75.6 | 140 |
| 465.tonto | 350 | 28.1 | 388 | 25.3 | 389 | 25.3 | 313 | 31.4 | 313 | 31.4 | 313 | 31.4 |
| 470.lbm | 39.2 | 350 | 39.6 | 347 | 37.8 | 363 | 39.2 | 350 | 39.6 | 347 | 37.8 | 363 |
| 481.wrf | 191 | 58.6 | 189 | 59.0 | 194 | 57.5 | 191 | 58.6 | 189 | 59.0 | 194 | 57.5 |
| 482.sphinx3 | 370 | 52.7 | 371 | 52.5 | 368 | 53.0 | 362 | 53.8 | 365 | 53.4 | 362 | 53.8 |

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 = "12"

Binaries compiled on a system with 2 x Xeon E5-2630L CPU + 64GB memory using RHEL6.2



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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.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:
-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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