



SPEC[®] CFP2006 Result

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Supermicro

SPECfp[®]2006 = 27.4

Motherboard X8DTN+-F (Intel Xeon L5609, 1.86 GHz)

SPECfp_base2006 = 25.7

CPU2006 license: 001176

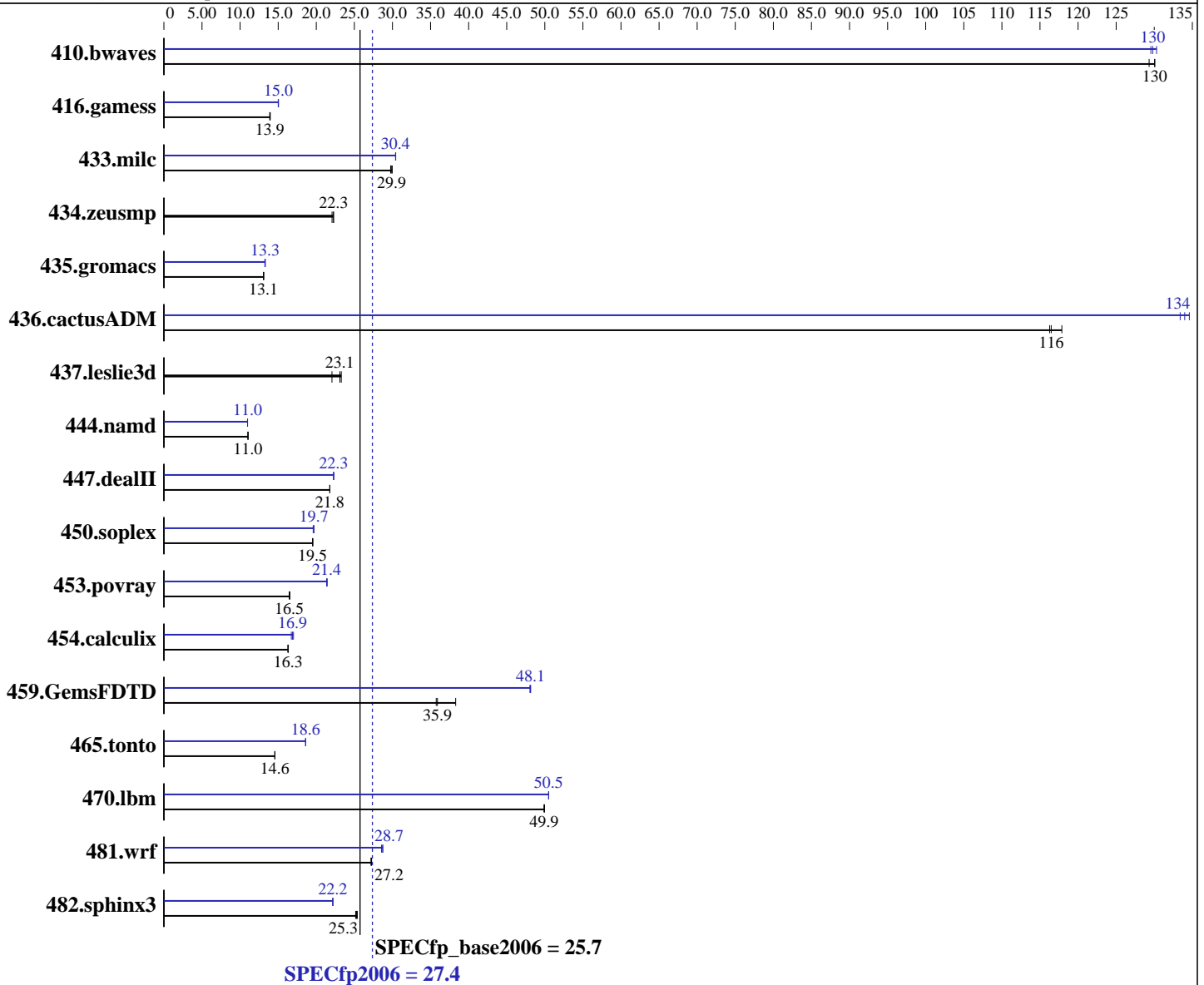
Test date: May-2010

Test sponsor: Supermicro

Hardware Availability: Mar-2010

Tested by: Supermicro

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon L5609
 CPU Characteristics:
 CPU MHz: 1866
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 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: 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: Yes
 File System: ReiserFS
 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: 48 GB (12 x 4 GB DDR3-1066 RDIMM, ECC, CL7)
 Disk Subsystem: 1 x 500 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 | | | | | |
|---------------|------------|-------------|-------------|-------------|------------|-------------|------------|-------------|------------|-------------|-------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 105 | 129 | 104 | 130 | 104 | 130 | 105 | 130 | 104 | 130 | 105 | 130 |
| 416.gamess | 1408 | 13.9 | 1408 | 13.9 | 1402 | 14.0 | 1305 | 15.0 | 1302 | 15.0 | 1303 | 15.0 |
| 433.milc | 308 | 29.8 | 306 | 30.0 | 307 | 29.9 | 302 | 30.4 | 302 | 30.4 | 302 | 30.4 |
| 434.zeusmp | 412 | 22.1 | 409 | 22.3 | 409 | 22.3 | 412 | 22.1 | 409 | 22.3 | 409 | 22.3 |
| 435.gromacs | 547 | 13.1 | 547 | 13.1 | 544 | 13.1 | 537 | 13.3 | 539 | 13.3 | 537 | 13.3 |
| 436.cactusADM | 101 | 118 | 103 | 116 | 103 | 116 | 89.6 | 133 | 88.8 | 135 | 89.2 | 134 |
| 437.leslie3d | 407 | 23.1 | 404 | 23.3 | 426 | 22.1 | 407 | 23.1 | 404 | 23.3 | 426 | 22.1 |
| 444.namd | 727 | 11.0 | 727 | 11.0 | 726 | 11.0 | 731 | 11.0 | 730 | 11.0 | 731 | 11.0 |
| 447.dealII | 525 | 21.8 | 525 | 21.8 | 525 | 21.8 | 513 | 22.3 | 513 | 22.3 | 513 | 22.3 |
| 450.soplex | 427 | 19.5 | 427 | 19.5 | 427 | 19.5 | 424 | 19.7 | 424 | 19.7 | 426 | 19.6 |
| 453.povray | 323 | 16.5 | 322 | 16.5 | 323 | 16.5 | 248 | 21.4 | 249 | 21.4 | 249 | 21.4 |
| 454.calculix | 507 | 16.3 | 506 | 16.3 | 505 | 16.3 | 493 | 16.7 | 485 | 17.0 | 489 | 16.9 |
| 459.GemsFDTD | 297 | 35.7 | 277 | 38.3 | 295 | 35.9 | 220 | 48.1 | 221 | 48.0 | 220 | 48.1 |
| 465.tonto | 676 | 14.6 | 676 | 14.6 | 675 | 14.6 | 529 | 18.6 | 529 | 18.6 | 529 | 18.6 |
| 470.lbm | 275 | 49.9 | 275 | 50.0 | 275 | 49.9 | 272 | 50.5 | 272 | 50.5 | 272 | 50.5 |
| 481.wrf | 410 | 27.3 | 411 | 27.2 | 411 | 27.2 | 391 | 28.6 | 389 | 28.7 | 389 | 28.7 |
| 482.sphinx3 | 774 | 25.2 | 768 | 25.4 | 771 | 25.3 | 879 | 22.2 | 879 | 22.2 | 878 | 22.2 |

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

Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
 OMP_NUM_THREADS set to number of cores
 KMP_AFFINITY set to granularity=fine,scatter
 KMP_STACKSIZE set to 200M

Platform Notes

Fan speed set to Full Speed in BIOS Setup.
 As tested, the system used a Supermicro
 PWS-865-PQ power supply, 2 SNK-P0038P heatsinks,
 and 2 FAN-0077L 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 -parallel -opt-prefetch

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

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: `-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)
-ansi-alias`

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)
-parallel -ansi-alias -auto-ilp32`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
-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.dealIII: `-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- -auto-ilp32`

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Peak Optimization Flags (Continued)

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 -auto-ilp32

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
-parallel

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: basepeak = yes

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 -opt-prefetch -parallel

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)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

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: -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 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix

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>



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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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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 09:12:55 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 June 2010.