



SPEC[®] CFP2006 Result

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ACTION S.A.

SPECfp[®]_rate2006 = 70.9

ACTINA SOLAR 222 X2 (Intel Xeon E5420, 2.5 GHz)

SPECfp_rate_base2006 = 65.0

CPU2006 license: 9008

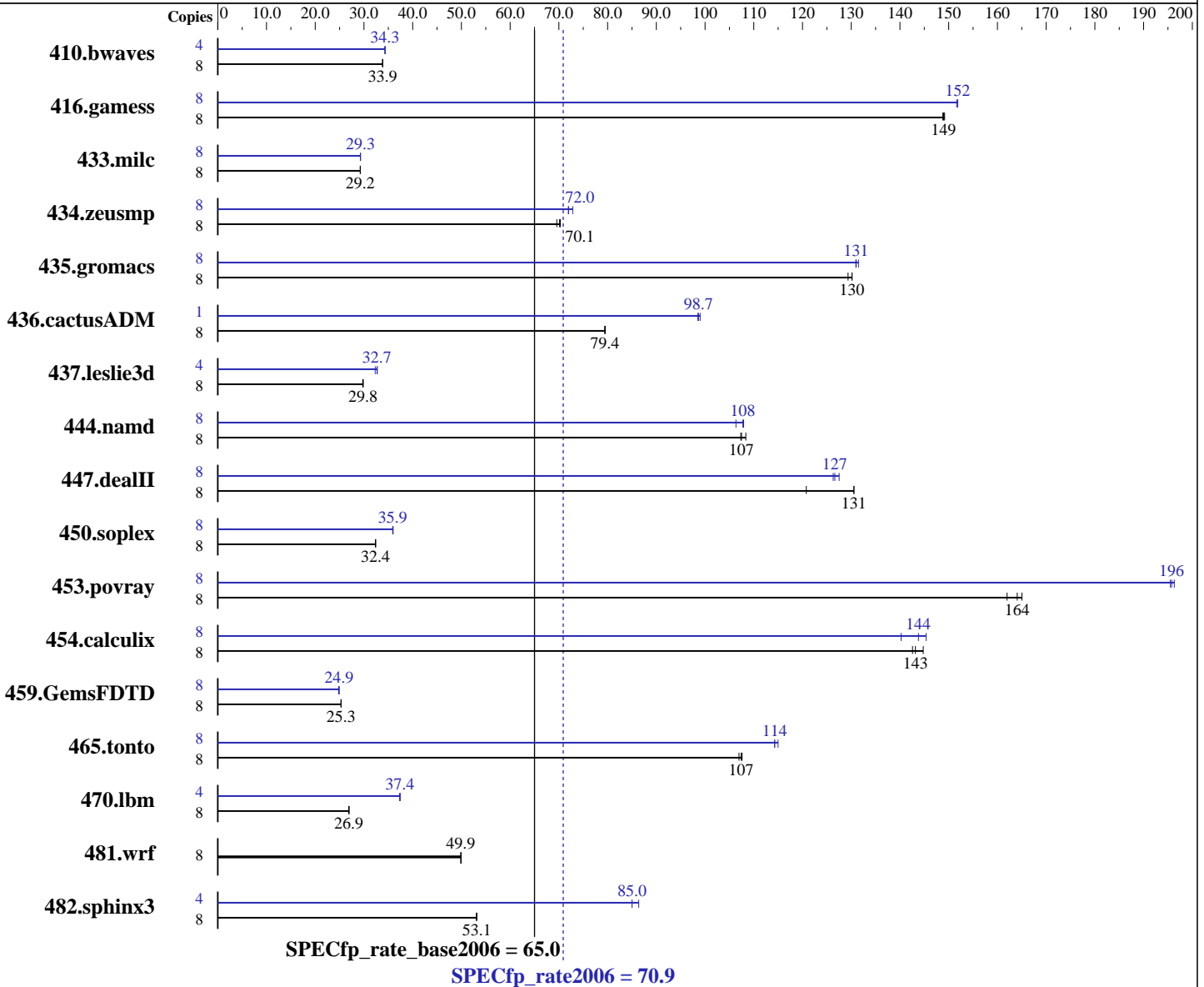
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Dec-2008

Hardware Availability: Sep-2008

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E5420
 CPU Characteristics: 1333 MHz System Bus
 CPU MHz: 2500
 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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) with SP2, kernel 2.6.16.60-0.21-smp
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042, l_fproc_b_11.0.042
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x 2 GB, PC2-5300, CL 5-5-5, FB ECC)
Disk Subsystem: 500 GB SATA, 7200 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 8 | 3218 | 33.8 | 3210 | 33.9 | <u>3211</u> | <u>33.9</u> | 4 | 1584 | 34.3 | 1584 | 34.3 | <u>1584</u> | <u>34.3</u> |
| 416.gamess | 8 | 1050 | 149 | 1053 | 149 | <u>1052</u> | <u>149</u> | 8 | 1033 | 152 | <u>1032</u> | <u>152</u> | 1032 | 152 |
| 433.milc | 8 | 2511 | 29.2 | 2511 | 29.2 | <u>2511</u> | <u>29.2</u> | 8 | 2509 | 29.3 | 2508 | 29.3 | <u>2508</u> | <u>29.3</u> |
| 434.zeusmp | 8 | 1035 | 70.3 | <u>1038</u> | <u>70.1</u> | 1047 | 69.6 | 8 | 1012 | 72.0 | <u>1011</u> | <u>72.0</u> | 999 | 72.8 |
| 435.gromacs | 8 | <u>439</u> | <u>130</u> | 439 | 130 | 442 | 129 | 8 | 436 | 131 | <u>436</u> | <u>131</u> | 434 | 131 |
| 436.cactusADM | 8 | 1203 | 79.5 | 1203 | 79.4 | <u>1203</u> | <u>79.4</u> | 1 | 121 | 98.5 | 121 | 99.0 | <u>121</u> | <u>98.7</u> |
| 437.leslie3d | 8 | 2521 | 29.8 | 2528 | 29.7 | <u>2521</u> | <u>29.8</u> | 4 | 1164 | 32.3 | 1149 | 32.7 | <u>1151</u> | <u>32.7</u> |
| 444.namd | 8 | 592 | 108 | 598 | 107 | <u>597</u> | <u>107</u> | 8 | <u>596</u> | <u>108</u> | 595 | 108 | 603 | 106 |
| 447.dealII | 8 | <u>701</u> | <u>131</u> | 701 | 131 | 758 | 121 | 8 | 725 | 126 | 718 | 128 | <u>723</u> | <u>127</u> |
| 450.soplex | 8 | <u>2061</u> | <u>32.4</u> | 2060 | 32.4 | 2062 | 32.4 | 8 | 1858 | 35.9 | <u>1858</u> | <u>35.9</u> | 1854 | 36.0 |
| 453.povray | 8 | 258 | 165 | 263 | 162 | <u>259</u> | <u>164</u> | 8 | 218 | 195 | 217 | 196 | <u>217</u> | <u>196</u> |
| 454.calculix | 8 | 463 | 143 | <u>461</u> | <u>143</u> | 456 | 145 | 8 | <u>459</u> | <u>144</u> | 471 | 140 | 454 | 145 |
| 459.GemsFDTD | 8 | <u>3353</u> | <u>25.3</u> | 3351 | 25.3 | 3358 | 25.3 | 8 | 3424 | 24.8 | <u>3409</u> | <u>24.9</u> | 3408 | 24.9 |
| 465.tonto | 8 | 732 | 108 | <u>733</u> | <u>107</u> | 736 | 107 | 8 | <u>689</u> | <u>114</u> | 689 | 114 | 685 | 115 |
| 470.lbm | 8 | 4086 | 26.9 | <u>4084</u> | <u>26.9</u> | 4082 | 26.9 | 4 | <u>1471</u> | <u>37.4</u> | 1468 | 37.4 | 1472 | 37.3 |
| 481.wrf | 8 | <u>1791</u> | <u>49.9</u> | 1789 | 50.0 | 1791 | 49.9 | 8 | <u>1791</u> | <u>49.9</u> | 1789 | 50.0 | 1791 | 49.9 |
| 482.sphinx3 | 8 | 2939 | 53.1 | <u>2934</u> | <u>53.1</u> | 2933 | 53.2 | 4 | 902 | 86.4 | <u>917</u> | <u>85.0</u> | 917 | 85.0 |

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.

Platform Notes

This result is measured on ACTINA SOLAR 222 X2.
Note that the ACTINA SOLAR 222 X2 and ACTINA SOLAR 212 X2 are electrically equivalent.

General Notes

taskset was used to bind processes to cores except for 436.cactusADM peak
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

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General Notes (Continued)

OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M

Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

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:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

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Base Optimization Flags (Continued)

Fortran benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: /opt/intel/Compiler/11.0/042/bin/ia32/ifort
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

Benchmarks using both Fortran and C:

icc ifort

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
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

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Peak Portability Flags (Continued)

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:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias
470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
-auto-ilp32
482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias -auto-ilp32
447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-
450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3
453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -ansi-alias
-scalar-rep-
434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static
437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch
459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch

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Peak Optimization Flags (Continued)

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -opt-prefetch -parallel
-auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.02.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.02.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.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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