



SPEC[®] CFP2006 Result

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ACTION S.A.

SPECfp[®]_rate2006 = 64.8

ACTINA SOLAR 220 X2 (Intel Xeon E5405, 2.0 GHz)

SPECfp_rate_base2006 = 59.7

CPU2006 license: 9008

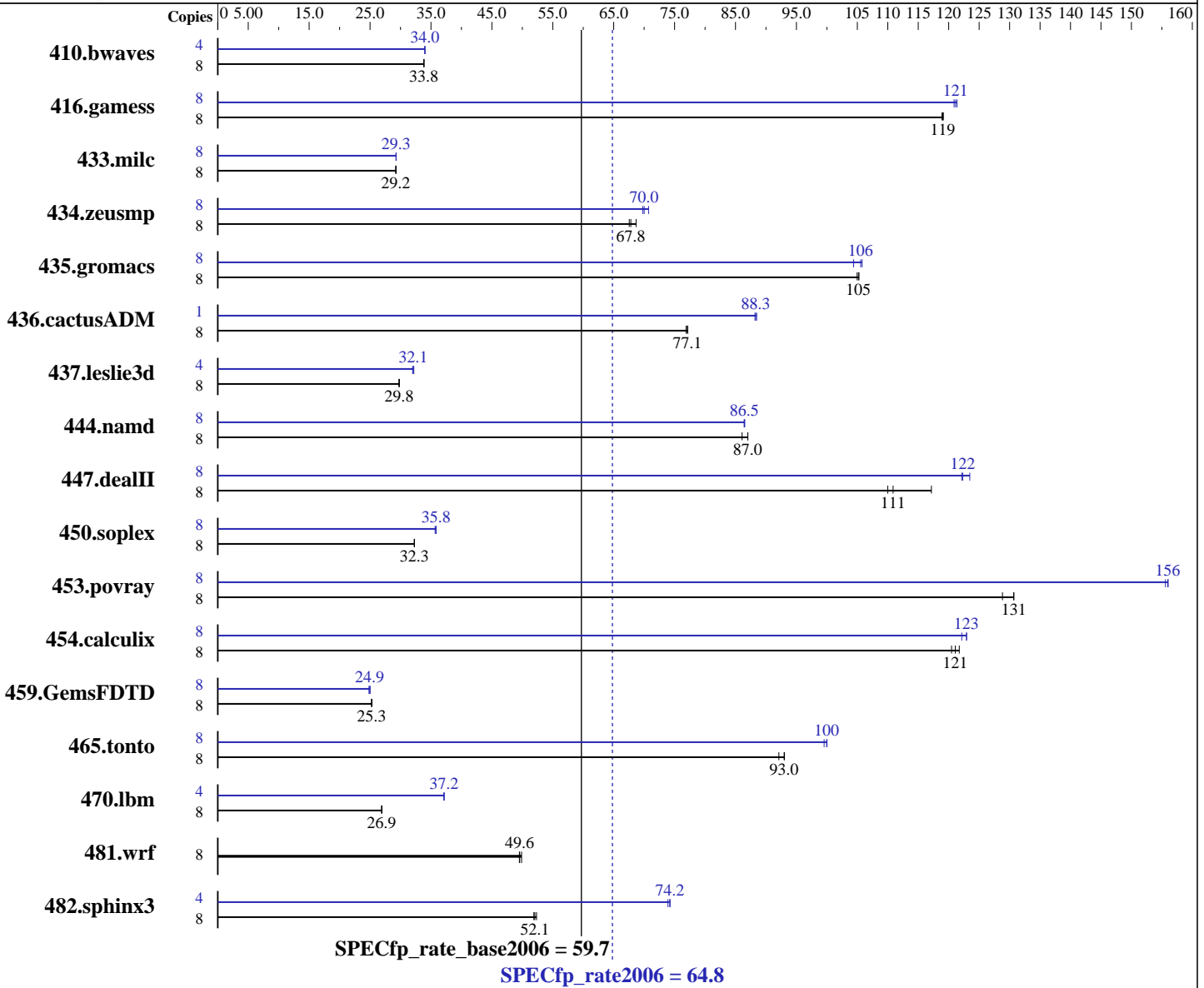
Test date: Dec-2008

Test sponsor: ACTION S.A.

Hardware Availability: Sep-2008

Tested by: ACTION S.A.

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E5405
 CPU Characteristics: 1333 MHz System Bus
 CPU MHz: 2000
 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

Continued on next page

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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Hardware (Continued)

L3 Cache: None
 Other Cache: None
 Memory: 16 GB (8x2 GB, PC2-5300, CL 5-5-5, FB ECC)
 Disk Subsystem: 500 GB SATA, 7200 RPM
 Other Hardware: None

Software (Continued)

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	3214	33.8	<u>3212</u>	<u>33.8</u>	3211	33.9	4	1598	34.0	<u>1599</u>	<u>34.0</u>	1599	34.0		
416.gamess	8	1315	119	1317	119	<u>1316</u>	<u>119</u>	8	1291	121	1296	121	<u>1293</u>	<u>121</u>		
433.milc	8	2511	29.2	<u>2512</u>	<u>29.2</u>	2512	29.2	8	2508	29.3	2509	29.3	<u>2509</u>	<u>29.3</u>		
434.zeusmp	8	1060	68.7	<u>1074</u>	<u>67.8</u>	1078	67.6	8	1029	70.7	<u>1040</u>	<u>70.0</u>	1043	69.8		
435.gromacs	8	544	105	543	105	<u>543</u>	<u>105</u>	8	<u>541</u>	<u>106</u>	540	106	547	104		
436.cactusADM	8	<u>1240</u>	<u>77.1</u>	1243	76.9	1239	77.2	1	135	88.5	<u>135</u>	<u>88.3</u>	135	88.2		
437.leslie3d	8	2528	29.7	<u>2525</u>	<u>29.8</u>	2523	29.8	4	<u>1172</u>	<u>32.1</u>	1168	32.2	1176	32.0		
444.namd	8	<u>737</u>	<u>87.0</u>	745	86.1	737	87.0	8	742	86.4	<u>742</u>	<u>86.5</u>	742	86.5		
447.dealII	8	832	110	781	117	<u>825</u>	<u>111</u>	8	749	122	741	123	<u>748</u>	<u>122</u>		
450.soplex	8	2066	32.3	<u>2067</u>	<u>32.3</u>	2068	32.3	8	1870	35.7	1861	35.8	<u>1863</u>	<u>35.8</u>		
453.povray	8	326	131	<u>326</u>	<u>131</u>	330	129	8	273	156	274	156	<u>273</u>	<u>156</u>		
454.calculix	8	542	122	548	120	<u>545</u>	<u>121</u>	8	537	123	540	122	<u>537</u>	<u>123</u>		
459.GemsFDTD	8	3362	25.3	<u>3359</u>	<u>25.3</u>	3357	25.3	8	<u>3403</u>	<u>24.9</u>	3419	24.8	3393	25.0		
465.tonto	8	855	92.1	<u>847</u>	<u>93.0</u>	846	93.0	8	791	99.6	<u>787</u>	<u>100</u>	787	100		
470.lbm	8	4084	26.9	<u>4083</u>	<u>26.9</u>	4082	26.9	4	<u>1479</u>	<u>37.2</u>	1479	37.2	1480	37.1		
481.wrf	8	1792	49.9	1805	49.5	<u>1803</u>	<u>49.6</u>	8	1792	49.9	1805	49.5	<u>1803</u>	<u>49.6</u>		
482.sphinx3	8	<u>2995</u>	<u>52.1</u>	3005	51.9	2979	52.3	4	<u>1050</u>	<u>74.2</u>	1055	73.9	1050	74.3		

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.

General Notes

Taskset was used to bind processes to cores except for 436.cactusADM peak
 OMP_NUM_THREADS set to number of processors
 KMP_AFFINITY set to "physical,0"
 KMP_STACKSIZE set to 64M



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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

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



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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.deallI: -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
```

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

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.dealIII: -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

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

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Peak Optimization Flags (Continued)

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

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-ic11.0-fp-linux64-revA.20090713.02.html>

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

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

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

Tested with SPEC CPU2006 v1.1.
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