



# SPEC® CFP2006 Result

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## ACTION S.A.

### SPECfp®\_rate2006 = 69.4

ACTINA SOLAR 200 X2 (Intel Xeon E5410, 2.33 GHz)

### SPECfp\_rate\_base2006 = 63.6

CPU2006 license: 9008

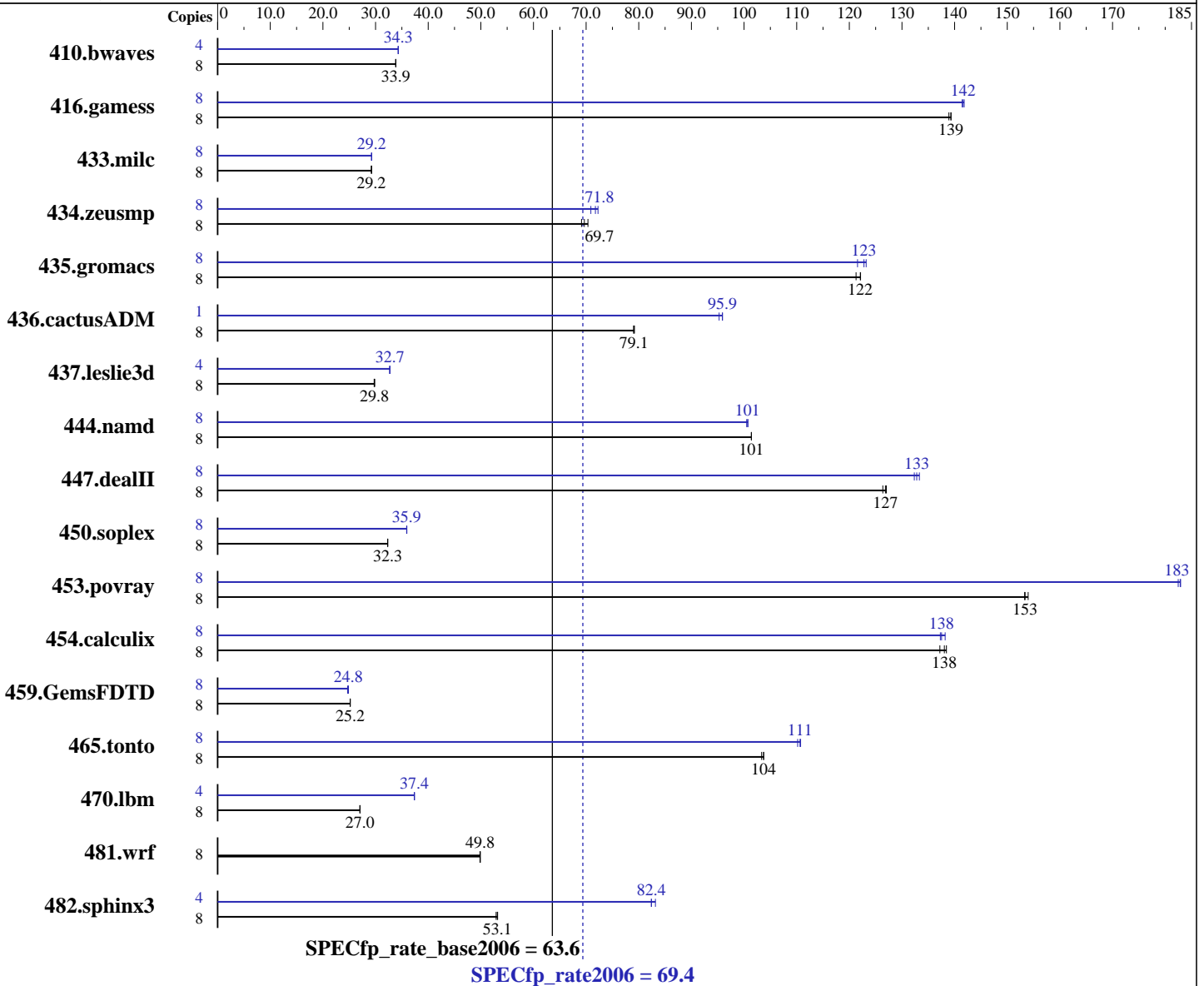
Test date: Dec-2008

Test sponsor: ACTION S.A.

Hardware Availability: Sep-2008

Tested by: ACTION S.A.

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon E5410  
 CPU Characteristics: 1333 MHz System Bus  
 CPU MHz: 2333  
 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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### Hardware (Continued)

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

### 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	3216	33.8	<b><u>3211</u></b>	<b><u>33.9</u></b>	3210	33.9	4	1584	34.3	1585	34.3	<b><u>1584</u></b>	<b><u>34.3</u></b>		
416.gamess	8	<b><u>1124</u></b>	<b><u>139</u></b>	1124	139	1128	139	8	1108	141	<b><u>1106</u></b>	<b><u>142</u></b>	1105	142		
433.milc	8	<b><u>2513</u></b>	<b><u>29.2</u></b>	2513	29.2	2513	29.2	8	2510	29.3	2512	29.2	<b><u>2511</u></b>	<b><u>29.2</u></b>		
434.zeusmp	8	<b><u>1045</u></b>	<b><u>69.7</u></b>	1035	70.3	1053	69.1	8	1007	72.3	<b><u>1014</u></b>	<b><u>71.8</u></b>	1027	70.9		
435.gromacs	8	<b><u>468</u></b>	<b><u>122</u></b>	471	121	468	122	8	470	122	<b><u>465</u></b>	<b><u>123</u></b>	464	123		
436.cactusADM	8	1210	79.0	<b><u>1209</u></b>	<b><u>79.1</u></b>	1207	79.2	1	125	95.9	125	95.3	<b><u>125</u></b>	<b><u>95.9</u></b>		
437.leslie3d	8	2520	29.8	2529	29.7	<b><u>2527</u></b>	<b><u>29.8</u></b>	4	1151	32.7	1148	32.7	<b><u>1150</u></b>	<b><u>32.7</u></b>		
444.namd	8	<b><u>633</u></b>	<b><u>101</u></b>	633	101	633	101	8	<b><u>637</u></b>	<b><u>101</u></b>	638	100	637	101		
447.dealII	8	<b><u>721</u></b>	<b><u>127</u></b>	724	126	720	127	8	<b><u>689</u></b>	<b><u>133</u></b>	687	133	692	132		
450.soplex	8	2066	32.3	2065	32.3	<b><u>2065</u></b>	<b><u>32.3</u></b>	8	<b><u>1857</u></b>	<b><u>35.9</u></b>	1856	35.9	1858	35.9		
453.povray	8	278	153	276	154	<b><u>277</u></b>	<b><u>153</u></b>	8	<b><u>233</u></b>	<b><u>183</u></b>	233	182	233	183		
454.calculix	8	477	138	481	137	<b><u>478</u></b>	<b><u>138</u></b>	8	481	137	478	138	<b><u>480</u></b>	<b><u>138</u></b>		
459.GemsFDTD	8	3368	25.2	3373	25.2	<b><u>3371</u></b>	<b><u>25.2</u></b>	8	3438	24.7	3416	24.8	<b><u>3422</u></b>	<b><u>24.8</u></b>		
465.tonto	8	<b><u>759</u></b>	<b><u>104</u></b>	762	103	759	104	8	711	111	714	110	<b><u>712</u></b>	<b><u>111</u></b>		
470.lbm	8	4066	27.0	4064	27.0	<b><u>4065</u></b>	<b><u>27.0</u></b>	4	1470	37.4	<b><u>1471</u></b>	<b><u>37.4</u></b>	1471	37.4		
481.wrf	8	1793	49.8	1790	49.9	<b><u>1793</u></b>	<b><u>49.8</u></b>	8	1793	49.8	1790	49.9	<b><u>1793</u></b>	<b><u>49.8</u></b>		
482.sphinx3	8	<b><u>2936</u></b>	<b><u>53.1</u></b>	2931	53.2	2947	52.9	4	<b><u>946</u></b>	<b><u>82.4</u></b>	937	83.2	946	82.4		

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 200 X2.  
Note that the ACTINA SOLAR 202 X2 and ACTINA SOLAR 200 X2 are electrically equivalent.



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ACTINA SOLAR 200 X2 (Intel Xeon E5410, 2.33 GHz)

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**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

## 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  
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

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## Base Optimization Flags (Continued)

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

## 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

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## Peak Portability Flags (Continued)

```

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:

```

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.deallI: -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

```

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## Peak Optimization Flags (Continued)

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

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](mailto:webmaster@spec.org).

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