



# SPEC<sup>®</sup> CFP2006 Result

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## ACTION S.A.

**SPECfp<sup>®</sup>2006 = 22.8**

ACTINA SOLAR E 110 X3 (Intel Xeon X3330, 2.66 GHz)

**SPECfp\_base2006 = 22.0**

CPU2006 license: 9008

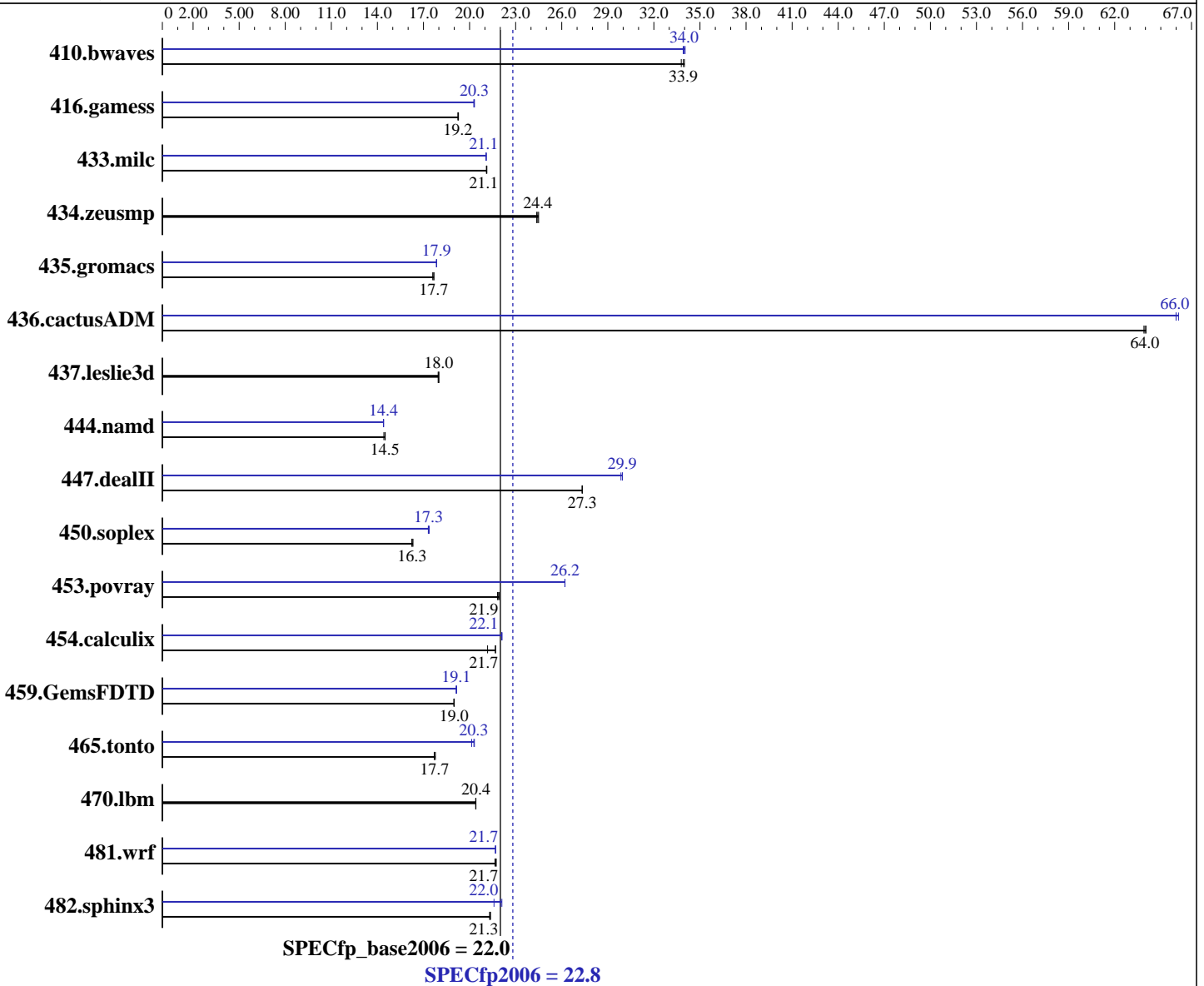
Test date: Nov-2008

Test sponsor: ACTION S.A.

Hardware Availability: Jan-2008

Tested by: ACTION S.A.

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon X3330  
 CPU Characteristics: 2.66 GHz, 1333 MHz System Bus  
 CPU MHz: 2660  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip, 3 MB shared / 2 cores

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### Software

Operating System: SuSe Linux Enterprise Server (x86\_64) 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\_cprof\_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: 8 GB (4x 2 GB DDR2 ECC, PC-6400)  
Disk Subsystem: 1x 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b>401</b>	<b>33.9</b>	400	34.0	402	33.8	401	33.9	399	34.0	<b>400</b>	<b>34.0</b>
416.gamess	1016	19.3	<b>1017</b>	<b>19.2</b>	1017	19.2	<b>964</b>	<b>20.3</b>	966	20.3	964	20.3
433.milc	434	21.1	<b>435</b>	<b>21.1</b>	435	21.1	435	21.1	<b>436</b>	<b>21.1</b>	436	21.1
434.zeusmp	373	24.4	<b>372</b>	<b>24.4</b>	372	24.5	373	24.4	<b>372</b>	<b>24.4</b>	372	24.5
435.gromacs	404	17.7	406	17.6	<b>404</b>	<b>17.7</b>	400	17.8	400	17.9	<b>400</b>	<b>17.9</b>
436.cactusADM	187	64.0	<b>187</b>	<b>64.0</b>	187	63.9	181	66.0	181	66.2	<b>181</b>	<b>66.0</b>
437.leslie3d	<b>522</b>	<b>18.0</b>	522	18.0	524	18.0	<b>522</b>	<b>18.0</b>	522	18.0	524	18.0
444.namd	553	14.5	556	14.4	<b>553</b>	<b>14.5</b>	<b>557</b>	<b>14.4</b>	557	14.4	557	14.4
447.dealII	<b>419</b>	<b>27.3</b>	419	27.3	418	27.3	<b>382</b>	<b>29.9</b>	382	30.0	383	29.9
450.soplex	511	16.3	<b>513</b>	<b>16.3</b>	514	16.2	482	17.3	480	17.4	<b>481</b>	<b>17.3</b>
453.povray	<b>243</b>	<b>21.9</b>	244	21.8	243	21.9	203	26.2	<b>203</b>	<b>26.2</b>	203	26.2
454.calculix	380	21.7	<b>381</b>	<b>21.7</b>	390	21.2	373	22.1	<b>373</b>	<b>22.1</b>	373	22.1
459.GemsFDTD	<b>559</b>	<b>19.0</b>	558	19.0	559	19.0	<b>555</b>	<b>19.1</b>	554	19.2	555	19.1
465.tonto	554	17.8	<b>555</b>	<b>17.7</b>	556	17.7	489	20.1	484	20.3	<b>485</b>	<b>20.3</b>
470.lbm	<b>673</b>	<b>20.4</b>	673	20.4	674	20.4	<b>673</b>	<b>20.4</b>	673	20.4	674	20.4
481.wrf	516	21.7	<b>514</b>	<b>21.7</b>	514	21.7	515	21.7	515	21.7	<b>515</b>	<b>21.7</b>
482.sphinx3	<b>914</b>	<b>21.3</b>	912	21.4	915	21.3	<b>886</b>	<b>22.0</b>	882	22.1	903	21.6

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

## General Notes

OMP\_NUM\_THREADS set to number of processors  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 200M  
TASKSET command was used to bind processes to CPUs.

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

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## Base Compiler Invocation (Continued)

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 -parallel -opt-prefetch

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

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**Software Availability:** Nov-2008

## Peak Compiler Invocation (Continued)

```
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:

ifort

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
437.leslie3d: -DSPEC_CPU_LP64
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:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
         -no-prec-div -static -fno-alias
```

```
470.lbm: basepeak = yes
```

```
482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
```

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## Peak Optimization Flags (Continued)

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-  
 -opt-prefetch

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  
 -parallel

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: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
 -no-prec-div -static -unroll2 -Ob0 -opt-prefetch  
 -parallel

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: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch  
 -parallel -auto-ilp32



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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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Tue Jul 22 21:18:39 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 9 December 2008.