



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## ACTION S.A.

SPECfp®\_rate2006 = 430

ACTINA SOLAR 820 X5 (Intel Xeon E5-2650)

SPECfp\_rate\_base2006 = 420

CPU2006 license: 9008

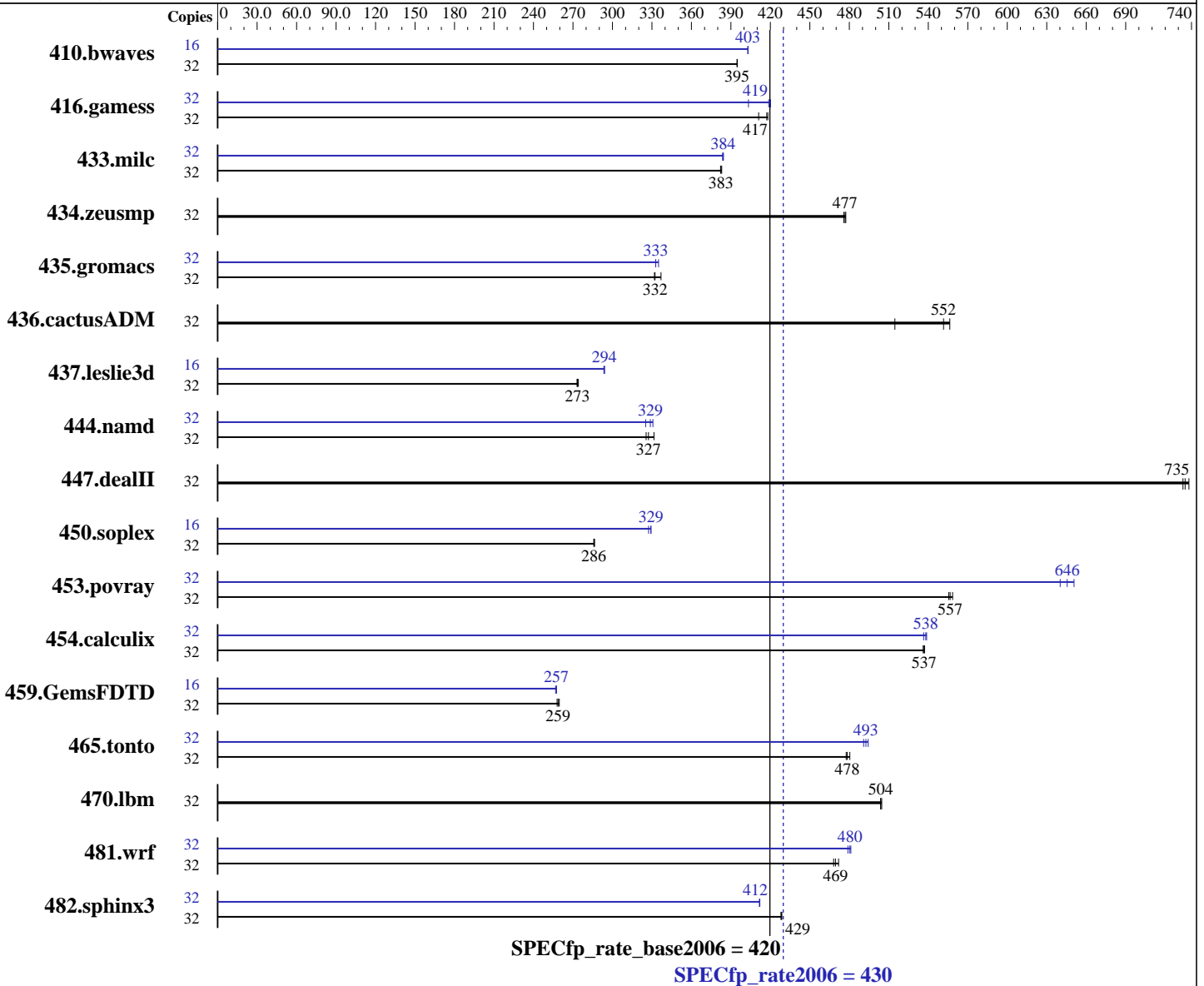
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Jun-2012

Hardware Availability: Mar-2012

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E5-2650  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core  
 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

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 11 SP2 (x86\_64) 3.0.13-0.27-default  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext3  
 System State: Run level 3 (multi-user)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## ACTION S.A.

SPECfp\_rate2006 = 430

ACTINA SOLAR 820 X5 (Intel Xeon E5-2650)

SPECfp\_rate\_base2006 = 420

CPU2006 license: 9008

Test date: Jun-2012

Test sponsor: ACTION S.A.

Hardware Availability: Mar-2012

Tested by: ACTION S.A.

Software Availability: Feb-2012

L3 Cache: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
 Disk Subsystem: 1 x 2 TB SATA 7200 RPM  
 Other Hardware: None

Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	1101	395	<u>1102</u>	<u>395</u>	1102	395	16	540	403	<u>540</u>	<u>403</u>	539	403
416.gamess	32	1499	418	<u>1502</u>	<u>417</u>	1524	411	32	<u>1496</u>	<u>419</u>	1491	420	1553	403
433.milc	32	767	383	<u>768</u>	<u>383</u>	769	382	32	764	384	766	384	<u>765</u>	<u>384</u>
434.zeusmp	32	612	476	<u>611</u>	<u>477</u>	610	477	32	612	476	<u>611</u>	<u>477</u>	610	477
435.gromacs	32	678	337	<u>687</u>	<u>332</u>	688	332	32	<u>686</u>	<u>333</u>	686	333	682	335
436.cactusADM	32	<u>693</u>	<u>552</u>	743	515	687	556	32	<u>693</u>	<u>552</u>	743	515	687	556
437.leslie3d	32	1097	274	1101	273	<u>1100</u>	<u>273</u>	16	<u>512</u>	<u>294</u>	512	293	512	294
444.namd	32	774	332	<u>784</u>	<u>327</u>	788	326	32	789	325	776	331	<u>781</u>	<u>329</u>
447.dealII	32	496	738	499	734	<u>498</u>	<u>735</u>	32	496	738	499	734	<u>498</u>	<u>735</u>
450.soplex	32	932	286	<u>933</u>	<u>286</u>	933	286	16	407	327	<u>405</u>	<u>329</u>	405	329
453.povray	32	305	558	<u>306</u>	<u>557</u>	306	556	32	<u>264</u>	<u>646</u>	262	651	266	640
454.calculix	32	<u>492</u>	<u>537</u>	491	537	492	536	32	<u>491</u>	<u>538</u>	490	539	492	536
459.GemsFDTD	32	1308	260	1316	258	<u>1312</u>	<u>259</u>	16	661	257	<u>660</u>	<u>257</u>	659	257
465.tonto	32	655	480	<u>658</u>	<u>478</u>	659	478	32	637	494	641	491	<u>639</u>	<u>493</u>
470.lbm	32	<u>873</u>	<u>504</u>	873	504	871	505	32	<u>873</u>	<u>504</u>	873	504	871	505
481.wrf	32	758	472	<u>761</u>	<u>469</u>	764	468	32	743	481	<u>744</u>	<u>480</u>	746	479
482.sphinx3	32	<u>1455</u>	<u>429</u>	1457	428	1455	429	32	1514	412	1515	412	<u>1514</u>	<u>412</u>

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on linux-zwpf Wed Jun 13 10:09:01 2012

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

**SPECfp\_rate2006 = 430**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2650)**

**SPECfp\_rate\_base2006 = 420**

**CPU2006 license:** 9008

**Test date:** Jun-2012

**Test sponsor:** ACTION S.A.

**Hardware Availability:** Mar-2012

**Tested by:** ACTION S.A.

**Software Availability:** Feb-2012

## Platform Notes (Continued)

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: <http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```

From /proc/cpuinfo
model name      : Intel(R) Xeon(R) CPU E5-2650 0 @ 2.00GHz
 2 "physical id"s (chips)
 32 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  cpu cores    : 8
  siblings     : 16
 physical 0:   cores 0 1 2 3 4 5 6 7
 physical 1:   cores 0 1 2 3 4 5 6 7
 cache size    : 20480 KB

```

```

From /proc/meminfo
MemTotal:      132140168 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

```

```

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)

```

```

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 2

```

```

uname -a:
Linux linux-zwpf 3.0.13-0.27-default #1 SMP Wed Feb 15 13:33:49 UTC 2012
(d73692b) x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Jun 12 20:00 last=S

```

SPEC is set to: /cpu2006.1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext3  1.8T   57G  1.8T   4% /

```

Additional information from dmidecode:

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/cpu2006.1.2/libs/32:/cpu2006.1.2/libs/64"

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

**SPECfp\_rate2006 = 430**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2650)**

**SPECfp\_rate\_base2006 = 420**

**CPU2006 license:** 9008

**Test date:** Jun-2012

**Test sponsor:** ACTION S.A.

**Hardware Availability:** Mar-2012

**Tested by:** ACTION S.A.

**Software Availability:** Feb-2012

## General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
 Transparent Huge Pages enabled with:  
 echo always > /sys/kernel/mm/transparent\_hugepage/enabled  
 Filesystem page cache cleared with:  
 echo 1> /proc/sys/vm/drop\_caches  
 runspec command invoked through numactl i.e.:  
 numactl --interleave=all runspec <etc>

## 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.deallI: -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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

**SPECfp\_rate2006 = 430**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2650)**

**SPECfp\_rate\_base2006 = 420**

**CPU2006 license:** 9008

**Test date:** Jun-2012

**Test sponsor:** ACTION S.A.

**Hardware Availability:** Mar-2012

**Tested by:** ACTION S.A.

**Software Availability:** Feb-2012

## Base Optimization Flags

C benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3`

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3`

## Peak Compiler Invocation

C benchmarks (except as noted below):

`icc -m64`

`482.sphinx3:icc -m32`

C++ benchmarks (except as noted below):

`icpc -m64`

`450.soplex:icpc -m32`

Fortran benchmarks:

`ifort -m64`

Benchmarks using both Fortran and C:

`icc -m64 ifort -m64`

## 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`

Continued on next page

Standard Performance Evaluation Corporation

[info@spec.org](mailto:info@spec.org)

<http://www.spec.org/>

Page 5



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

**SPECfp\_rate2006 = 430**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2650)**

**SPECfp\_rate\_base2006 = 420**

**CPU2006 license:** 9008

**Test date:** Jun-2012

**Test sponsor:** ACTION S.A.

**Hardware Availability:** Mar-2012

**Tested by:** ACTION S.A.

**Software Availability:** Feb-2012

## Peak Portability Flags (Continued)

454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
 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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32  
 -opt-mem-layout-trans=3

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2

### C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias  
 -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
 -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

**SPECfp\_rate2006 = 430**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2650)**

**SPECfp\_rate\_base2006 = 420**

**CPU2006 license:** 9008

**Test date:** Jun-2012

**Test sponsor:** ACTION S.A.

**Hardware Availability:** Mar-2012

**Tested by:** ACTION S.A.

**Software Availability:** Feb-2012

## Peak Optimization Flags (Continued)

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch  
-static -auto-ilp32 -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32  
-opt-mem-layout-trans=3

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-ic12.1-official-linux64.20111122.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 09:58:20 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 3 July 2012.