



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## ACTION S.A.

**SPECfp®\_rate2006 = 385**

ACTINA SOLAR 220 Q5 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp\_rate\_base2006 = 381**

CPU2006 license: 9008

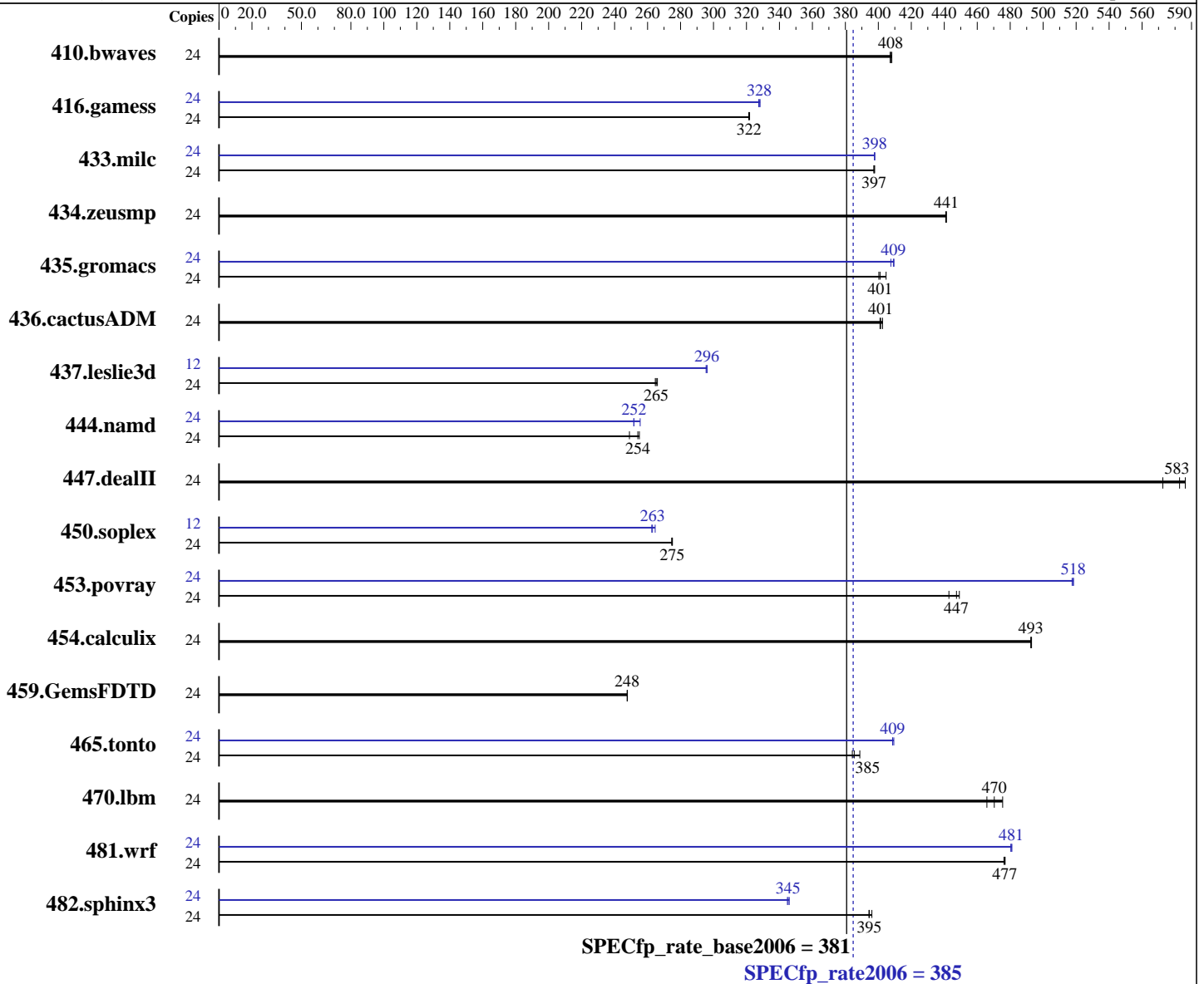
Test date: Jul-2014

Test sponsor: ACTION S.A.

Hardware Availability: Oct-2013

Tested by: ACTION S.A.

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2620 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.60 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
 2.6.32-358.11.1.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## ACTION S.A.

ACTINA SOLAR 220 Q5 (Intel Xeon E5-2620 v2, 2.10 GHz)

SPECfp\_rate2006 = 385

SPECfp\_rate\_base2006 = 381

CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Jul-2014

Hardware Availability: Oct-2013

Software Availability: Sep-2013

L3 Cache: 15 MB I+D on chip per chip  
Other Cache: None  
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz and CL11)  
Disk Subsystem: 1 x 240 GB SATA II SSD  
Other Hardware: None

System State: Run level 3 (multi-user)  
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	24	799	408	<b>800</b>	<b>408</b>	801	407	24	799	408	<b>800</b>	<b>408</b>	801	407		
416.gamess	24	1462	321	1460	322	<b>1461</b>	<b>322</b>	24	<b>1434</b>	<b>328</b>	1432	328	1435	327		
433.milc	24	<b>554</b>	<b>397</b>	554	398	555	397	24	554	398	554	398	<b>554</b>	<b>398</b>		
434.zeusmp	24	495	441	495	441	<b>495</b>	<b>441</b>	24	495	441	495	441	<b>495</b>	<b>441</b>		
435.gromacs	24	<b>427</b>	<b>401</b>	423	405	428	400	24	420	408	418	410	<b>419</b>	<b>409</b>		
436.cactusADM	24	715	401	<b>714</b>	<b>401</b>	712	403	24	715	401	<b>714</b>	<b>401</b>	712	403		
437.leslie3d	24	852	265	848	266	<b>851</b>	<b>265</b>	12	382	295	381	296	<b>381</b>	<b>296</b>		
444.namd	24	<b>758</b>	<b>254</b>	773	249	755	255	24	753	256	765	252	<b>765</b>	<b>252</b>		
447.dealII	24	468	586	<b>471</b>	<b>583</b>	480	573	24	468	586	<b>471</b>	<b>583</b>	480	573		
450.soplex	24	729	275	728	275	<b>728</b>	<b>275</b>	12	381	263	378	265	<b>381</b>	<b>263</b>		
453.povray	24	284	449	288	443	<b>285</b>	<b>447</b>	24	246	518	<b>246</b>	<b>518</b>	247	518		
454.calculix	24	402	493	402	493	<b>402</b>	<b>493</b>	24	402	493	402	493	<b>402</b>	<b>493</b>		
459.GemsFDTD	24	<b>1028</b>	<b>248</b>	1028	248	1028	248	24	<b>1028</b>	<b>248</b>	1028	248	1028	248		
465.tonto	24	<b>613</b>	<b>385</b>	607	389	615	384	24	577	409	578	409	<b>578</b>	<b>409</b>		
470.lbm	24	694	475	708	466	<b>701</b>	<b>470</b>	24	694	475	708	466	<b>701</b>	<b>470</b>		
481.wrf	24	<b>562</b>	<b>477</b>	562	477	563	476	24	558	480	<b>558</b>	<b>481</b>	557	481		
482.sphinx3	24	1181	396	1186	394	<b>1185</b>	<b>395</b>	24	1357	345	1352	346	<b>1355</b>	<b>345</b>		

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"



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## ACTION S.A.

ACTINA SOLAR 220 Q5 (Intel Xeon E5-2620 v2, 2.10 GHz)

SPECfp\_rate2006 = 385

SPECfp\_rate\_base2006 = 381

CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Jul-2014

Hardware Availability: Oct-2013

Software Availability: Sep-2013

### Platform Notes

Bios Settings  
 Power Technology = Custom  
 Energy Performance = Performance  
 Turbo Mode = Enabled  
 C1E Support = Disabled  
 CPU C3 Report = Disabled  
 CPU C6 Report = Disabled  
 Package C State Limit = No Limit

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818  
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
 running on localhost.localdomain Mon Jul 14 01:16:07 2014

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 E5-2620 v2 @ 2.10GHz
 2 "physical id"s (chips)
 24 "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 : 6
  siblings  : 12
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB
```

```
From /proc/meminfo
MemTotal: 132126620 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux localhost.localdomain 2.6.32-358.11.1.el6.x86_64 #1 SMP Tue Nov 19
17:43:04 CET 2013 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Jul 8 21:39

```
SPEC is set to: /cpu2006.1.2
Filesystem Type Size Used Avail Use% Mounted on
Continued on next page
```



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

**SPECfp\_rate2006 = 385**

ACTINA SOLAR 220 Q5 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp\_rate\_base2006 = 381**

**CPU2006 license:** 9008

**Test date:** Jul-2014

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

**Hardware Availability:** Oct-2013

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

**Software Availability:** Sep-2013

## Platform Notes (Continued)

/dev/sda1 ext4 193G 77G 107G 42% /

Additional information from dmidecode:

BIOS American Megatrends Inc. 3.0a 02/11/2014

Memory:

16x 8 GB

14x Hynix Semiconducto HMT31GR7EFR4C 8 GB 1600 MHz 2 rank

2x Hynix Semiconductor HMT31GR7EFR4C- 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)

dmidecode does not properly detect memory modules

16 modules of 8 GB were used to run the test (128 GB total)

## 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:/cpu2006.1.2/sh"

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat\_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>

Binaries compiled on a system with 2x Xeon E5-2650 v2 chips + 256 GB memory using RedHat EL 6.4

## 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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

ACTINA SOLAR 220 Q5 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp\_rate2006 = 385**

**SPECfp\_rate\_base2006 = 381**

**CPU2006 license:** 9008

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

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

**Test date:** Jul-2014

**Hardware Availability:** Oct-2013

**Software Availability:** Sep-2013

## Base Portability Flags (Continued)

```
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
```

## Base Optimization Flags

C benchmarks:

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

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

```
-xAVX -ipo -O3 -no-prec-div -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
```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

ACTINA SOLAR 220 Q5 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp\_rate2006 = 385**

**SPECfp\_rate\_base2006 = 381**

**CPU2006 license:** 9008

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

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

**Test date:** Jul-2014

**Hardware Availability:** Oct-2013

**Software Availability:** Sep-2013

## Peak Compiler Invocation (Continued)

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

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3  
 -unroll2

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(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.

ACTINA SOLAR 220 Q5 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp\_rate2006 = 385**

**SPECfp\_rate\_base2006 = 381**

**CPU2006 license:** 9008

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

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

**Test date:** Jul-2014

**Hardware Availability:** Oct-2013

**Software Availability:** Sep-2013

## Peak Optimization Flags (Continued)

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

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-

434.zeusmp: basepeak = yes

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

459.GemsFDTD: basepeak = yes

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) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevB-apr-2014-For-Supermicro-Platform.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevB-apr-2014-For-Supermicro-Platform.xml>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

ACTINA SOLAR 220 Q5 (Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECfp\_rate2006 = 385**

**SPECfp\_rate\_base2006 = 381**

**CPU2006 license:** 9008

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

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

**Test date:** Jul-2014

**Hardware Availability:** Oct-2013

**Software Availability:** Sep-2013

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 Wed Jul 30 10:53:56 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 29 July 2014.