



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## ACTION S.A.

SPECfp<sup>®</sup>\_rate2006 = 374

ACTINA SOLAR 820 X5 (Intel Xeon E5-2640)

SPECfp\_rate\_base2006 = 365

CPU2006 license: 9008

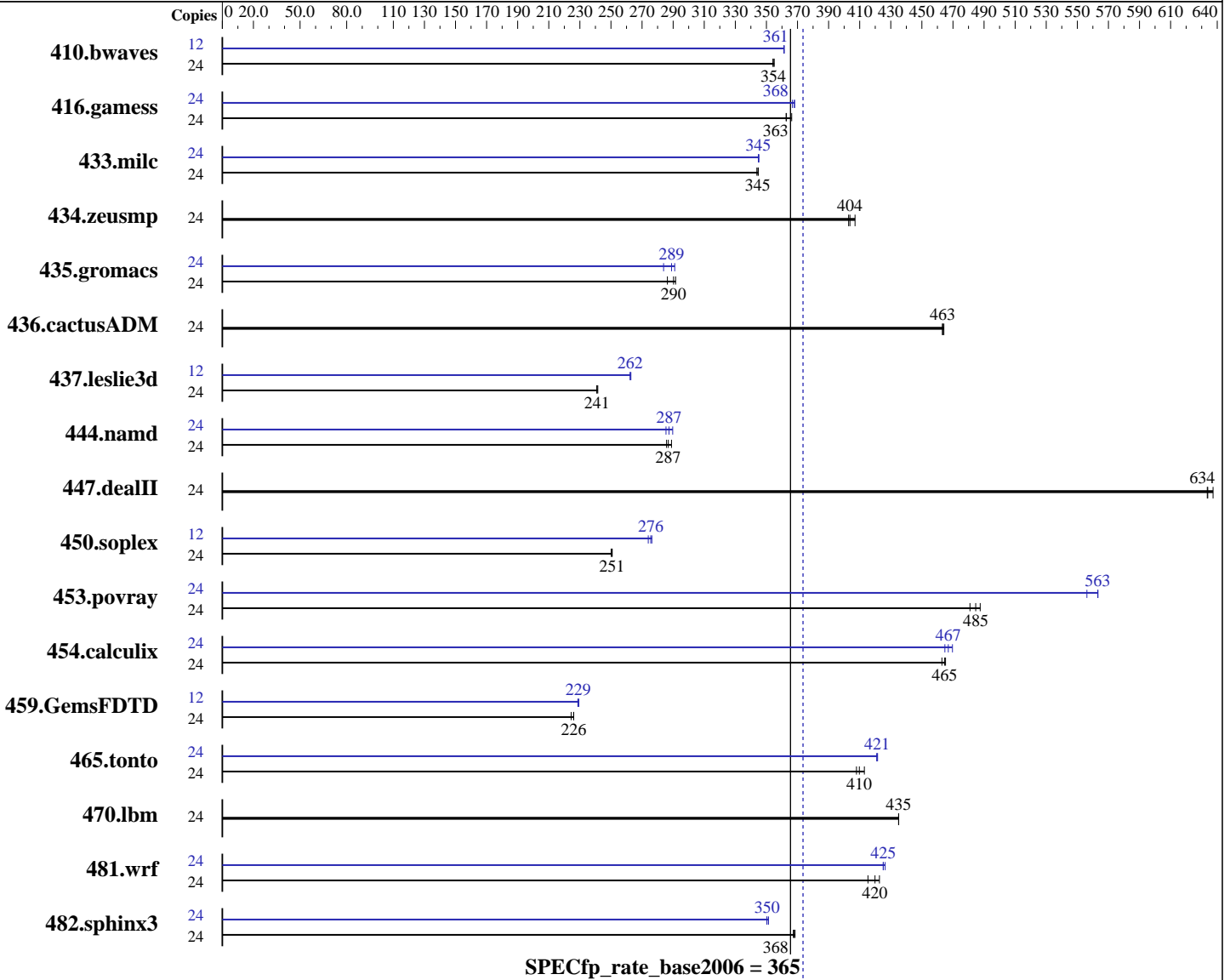
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Apr-2012

Hardware Availability: Mar-2012

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E5-2640  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz  
 CPU MHz: 2500  
 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: 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 = 374**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2640)**

**SPECfp\_rate\_base2006 = 365**

**CPU2006 license:** 9008

**Test date:** Apr-2012

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

**Hardware Availability:** Mar-2012

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

**Software Availability:** Feb-2012

**L3 Cache:** 15 MB I+D on chip per chip  
**Other Cache:** None  
**Memory:** 128 GB (16 x 8 GB 2Rx4 PC3-10600R-9, ECC)  
**Disk Subsystem:** 1 x 2 TB 7200 RPM SATA  
**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	24	919	355	<b>920</b>	<b>354</b>	921	354	12	451	361	<b>451</b>	<b>361</b>	451	361
416.gamess	24	1283	366	<b>1295</b>	<b>363</b>	1296	363	24	<b>1277</b>	<b>368</b>	1281	367	1276	368
433.milc	24	641	344	639	345	<b>640</b>	<b>345</b>	24	639	345	<b>639</b>	<b>345</b>	638	345
434.zeusmp	24	<b>541</b>	<b>404</b>	542	403	537	407	24	<b>541</b>	<b>404</b>	542	403	537	407
435.gromacs	24	588	292	599	286	<b>590</b>	<b>290</b>	24	589	291	<b>593</b>	<b>289</b>	604	284
436.cactusADM	24	618	464	619	463	<b>619</b>	<b>463</b>	24	618	464	619	463	<b>619</b>	<b>463</b>
437.leslie3d	24	934	242	<b>936</b>	<b>241</b>	937	241	12	430	262	429	263	<b>430</b>	<b>262</b>
444.namd	24	666	289	674	286	<b>671</b>	<b>287</b>	24	664	290	674	285	<b>670</b>	<b>287</b>
447.dealII	24	433	634	431	637	<b>433</b>	<b>634</b>	24	433	634	431	637	<b>433</b>	<b>634</b>
450.soplex	24	800	250	798	251	<b>799</b>	<b>251</b>	12	<b>363</b>	<b>276</b>	362	276	365	274
453.povray	24	262	488	265	481	<b>263</b>	<b>485</b>	24	227	563	<b>227</b>	<b>563</b>	230	556
454.calculix	24	428	463	426	465	<b>426</b>	<b>465</b>	24	422	470	426	465	<b>424</b>	<b>467</b>
459.GemsFDTD	24	<b>1127</b>	<b>226</b>	1127	226	1135	224	12	557	229	555	229	<b>556</b>	<b>229</b>
465.tonto	24	572	413	579	408	<b>576</b>	<b>410</b>	24	560	422	<b>561</b>	<b>421</b>	561	421
470.lbm	24	758	435	<b>758</b>	<b>435</b>	758	435	24	758	435	<b>758</b>	<b>435</b>	758	435
481.wrf	24	634	423	645	415	<b>639</b>	<b>420</b>	24	631	425	<b>630</b>	<b>425</b>	629	426
482.sphinx3	24	<b>1272</b>	<b>368</b>	1270	368	1273	367	24	1331	351	1335	350	<b>1335</b>	<b>350</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"

## Platform Notes

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on linux-kw54 Mon Apr 23 19:29:17 2012

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**ACTION S.A.**

**SPECfp\_rate2006 = 374**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2640)**

**SPECfp\_rate\_base2006 = 365**

**CPU2006 license:** 9008

**Test date:** Apr-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 E5-2640 0 @ 2.50GHz
 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:      132117020 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-kw54 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 Apr 23 06:52 last=S

```

SPEC is set to: /cpu2006.1.2
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext3  1.8T   51G  1.8T   3% /

```

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 = 374**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2640)**

**SPECfp\_rate\_base2006 = 365**

**CPU2006 license:** 9008

**Test date:** Apr-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 = 374**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2640)**

**SPECfp\_rate\_base2006 = 365**

**CPU2006 license:** 9008

**Test date:** Apr-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 = 374**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2640)**

**SPECfp\_rate\_base2006 = 365**

**CPU2006 license:** 9008

**Test date:** Apr-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 = 374**

**ACTINA SOLAR 820 X5 (Intel Xeon E5-2640)**

**SPECfp\_rate\_base2006 = 365**

**CPU2006 license:** 9008

**Test date:** Apr-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 08:42:52 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 19 June 2012.