# SPEC® CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## ACTION S.A.

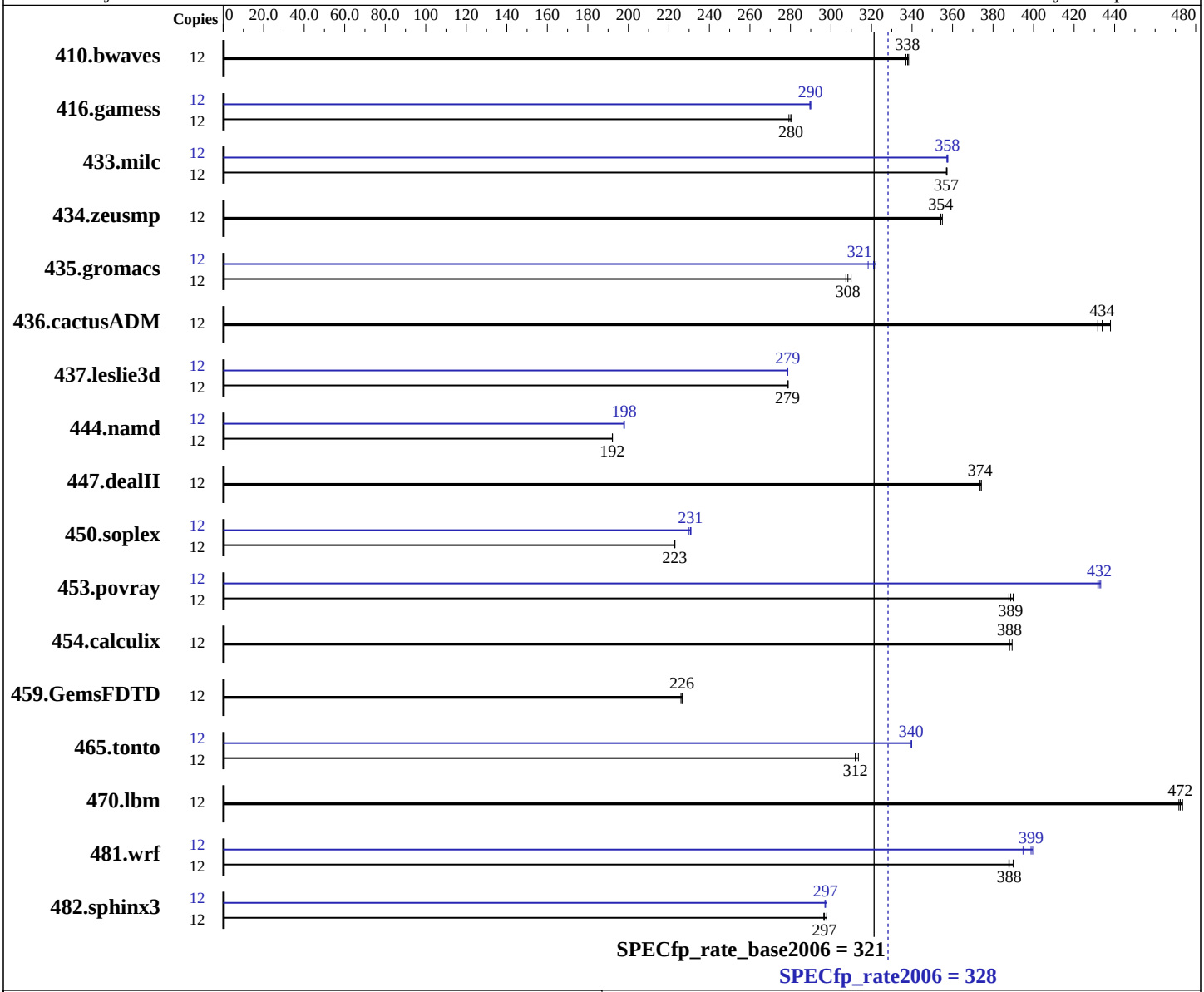
ACTINA SOLAR 222 S6 (Intel Xeon E5-2609 v3, 1.90 GHz)

SPECfp®_rate2006 = 328

SPECfp_rate_base2006 = 321

**CPU2006 license:** 9008
**Test sponsor:** ACTION S.A.
**Tested by:** ACTION S.A.

**Test date:** Mar-2015
**Hardware Availability:** Sep-2014
**Software Availability:** Sep-2014




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2609 v3 |
| CPU Characteristics: | |
| CPU MHz: | 1900 |
| FPU: | Integrated |
| CPU(s) enabled: | 12 cores, 2 chips, 6 cores/chip |
| 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 7.0 (Maipo)<br>3.10.0-123.20.1.el7.x86_64 |
| Compiler: | C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;<br>Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux |
| Auto Parallel: | No |
| File System: | ext4 |

Continued on next page

# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## ACTION S.A.

ACTINA SOLAR 222 S6 (Intel Xeon E5-2609 v3, 1.90 GHz)

SPECfp_rate2006 = 328

SPECfp_rate_base2006 = 321

**CPU2006 license:** 9008
**Test sponsor:** ACTION S.A.
**Tested by:** ACTION S.A.

**Test date:** Mar-2015
**Hardware Availability:** Sep-2014
**Software Availability:** Sep-2014

L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 1Rx4 PC4-2133P-R, running at 1600 MHz)
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 | 12 | 484 | 337 | **483** | **338** | 482 | 338 | 12 | 484 | 337 | **483** | **338** | 482 | 338 |
| 416.gamess | 12 | 841 | 279 | 838 | 281 | **839** | **280** | 12 | **811** | **290** | 810 | 290 | 811 | 290 |
| 433.milc | 12 | 309 | 357 | **309** | **357** | 308 | 357 | 12 | **308** | **358** | 308 | 358 | 308 | 357 |
| 434.zeusmp | 12 | **308** | **354** | 308 | 354 | 308 | 355 | 12 | **308** | **354** | 308 | 354 | 308 | 355 |
| 435.gromacs | 12 | 279 | 307 | 276 | 310 | **278** | **308** | 12 | 266 | 322 | 269 | 318 | **267** | **321** |
| 436.cactusADM | 12 | 332 | 432 | **331** | **434** | 327 | 438 | 12 | 332 | 432 | **331** | **434** | 327 | 438 |
| 437.leslie3d | 12 | **405** | **279** | 405 | 279 | 404 | 279 | 12 | **405** | **279** | 405 | 279 | 405 | 279 |
| 444.namd | 12 | **501** | **192** | 501 | 192 | 501 | 192 | 12 | 486 | 198 | **486** | **198** | 487 | 198 |
| 447.dealII | 12 | **367** | **374** | 368 | 373 | 367 | 374 | 12 | **367** | **374** | 368 | 373 | 367 | 374 |
| 450.soplex | 12 | **449** | **223** | 449 | 223 | 449 | 223 | 12 | **434** | **231** | 433 | 231 | 435 | 230 |
| 453.povray | 12 | 164 | 390 | **164** | **389** | 165 | 388 | 12 | **148** | **432** | 147 | 433 | 148 | 432 |
| 454.calculix | 12 | 254 | 389 | 255 | 388 | **255** | **388** | 12 | 254 | 389 | 255 | 388 | **255** | **388** |
| 459.GemsFDTD | 12 | **562** | **226** | 563 | 226 | 562 | 227 | 12 | **562** | **226** | 563 | 226 | 562 | 227 |
| 465.tonto | 12 | 378 | 312 | 377 | 314 | **378** | **312** | 12 | **348** | **340** | 348 | 339 | 347 | 340 |
| 470.lbm | 12 | 350 | 472 | **349** | **472** | 348 | 474 | 12 | 350 | 472 | **349** | **472** | 348 | 474 |
| 481.wrf | 12 | **345** | **388** | 344 | 390 | 346 | 388 | 12 | **336** | **399** | 340 | 395 | 335 | 400 |
| 482.sphinx3 | 12 | 789 | 296 | 785 | 298 | **788** | **297** | 12 | 785 | 298 | 787 | 297 | **787** | **297** |

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

```
Bios Settings
Power Technology = Energy Efficient
```

Continued on next page

## Platform Notes (Continued)

```
BMC Setting
Fan Mode = Full Speed

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Wed Mar  4 19:02:09 2015

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 E5-2609 v3 @ 1.90GHz
      2 "physical id"s (chips)
      12 "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  : 6
      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:       131761400 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 7.0 (Maipo)

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.0 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="7.0"
      PRETTY_NAME="Red Hat Enterprise Linux"
      ANSI_COLOR="0;31"
      CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
   redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
   Linux localhost.localdomain 3.10.0-123.20.1.el7.x86_64 #3 SMP Wed Feb 4
   14:55:18 CET 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Mar 4 07:24
```

Continued on next page

## Platform Notes (Continued)

```
SPEC is set to: /cpu2006.1.2
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda1      ext4  212G   26G  176G  13% /

Additional information from dmidecode:
  BIOS American Megatrends Inc. 1.0a 11/05/2014
  Memory:
   16x   8 GB
   1x Micron(data:14/25) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 rank
   2x Micron(data:14/30) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 rank
   10x Micron(data:14/32) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 rank
   1x Micron(data:14/34) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 rank
   2x Micron(data:14/35) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 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 v3 chips + 256 GB memory
 using RedHat EL 7.0
```

## 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.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:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks (except as noted below):
icpc -m64

450.soplex: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Continued on next page

## Peak Compiler Invocation (Continued)

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.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
482.sphinx3: -DSPEC_CPU_LP64

## Peak Optimization Flags

C benchmarks:

433.milc: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
-unroll2

C++ benchmarks:

444.namd: -xCORE-AVX2(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

Continued on next page

# Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: -xCORE-AVX2(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

453.povray: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevC-jan-2015-For-Supermicro-Platform.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevC-jan-2015-For-Supermicro-Platform.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.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Mar 24 17:18:05 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 24 March 2015.