



SPEC® CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ACTION S.A.

ACTINA SOLAR 210 X6 (Intel Xeon E5-2620 v4, 2.10 GHz)

SPECfp®2006 = 105

SPECfp_base2006 = 98.8

CPU2006 license: 9008

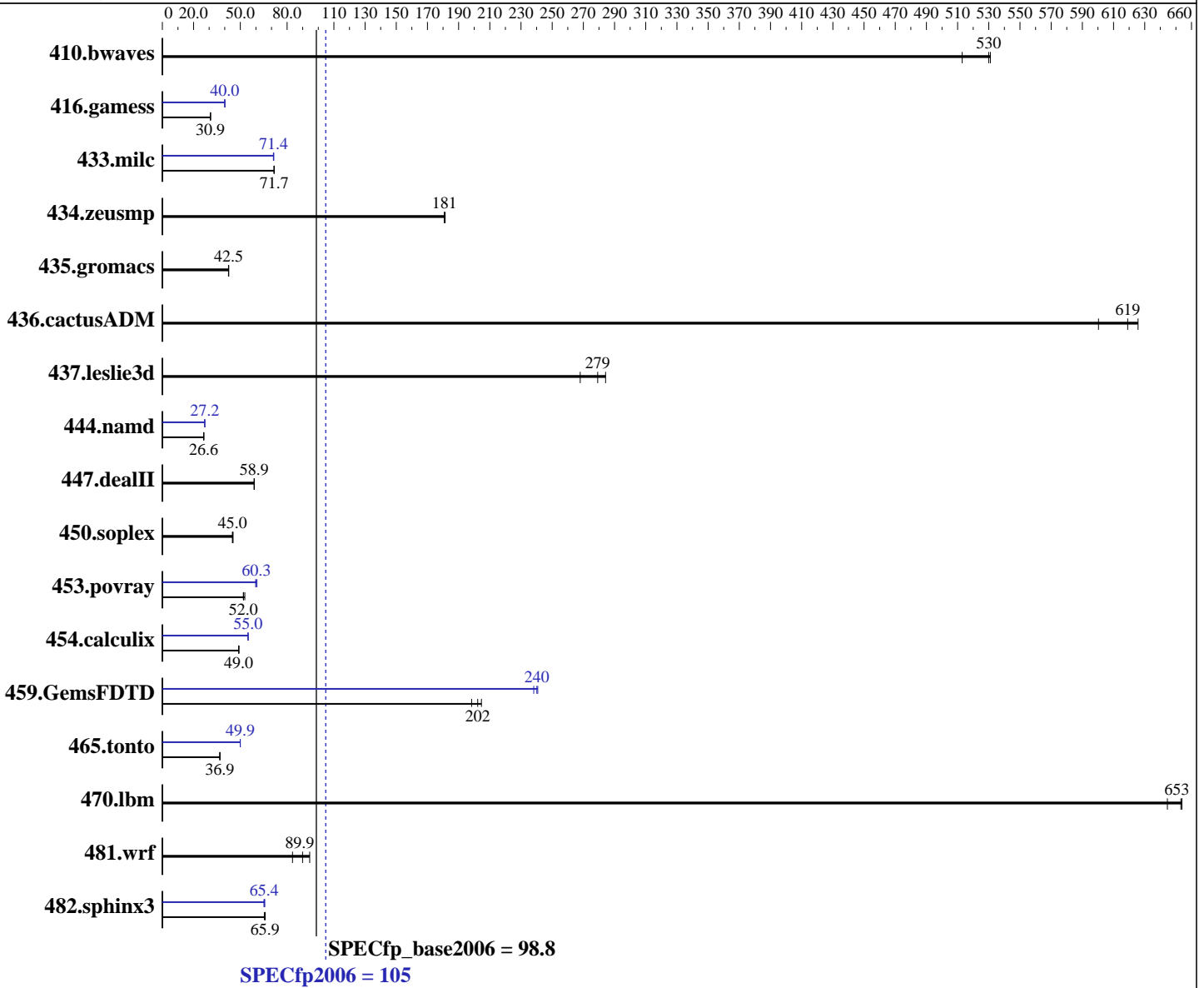
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016



Hardware

CPU Name: Intel Xeon E5-2620 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
 CPU MHz: 2100
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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 7.2 (Maipo)
 3.10.0-327.18.2.el7.x86_64
 Compiler: C/C++: Version 16.0.3.210 of Intel C++ Studio XE for Linux;
 Fortran: Version 16.0.3.210 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ACTION S.A.

ACTINA SOLAR 210 X6 (Intel Xeon E5-2620 v4, 2.10 GHz)

SPECfp2006 = **105**

SPECfp_base2006 = **98.8**

CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016

L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)
Disk Subsystem: 1 x 240 GB SATA II SSD
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	25.6	530	26.5	513	25.6	531	25.6	530	26.5	513	25.6	531
416.gamess	635	30.9	636	30.8	633	30.9	489	40.1	489	40.0	489	40.0
433.milc	128	71.7	128	71.7	128	71.6	129	71.4	129	71.2	129	71.4
434.zeusmp	50.2	181	50.3	181	50.3	181	50.2	181	50.3	181	50.3	181
435.gromacs	168	42.5	168	42.6	168	42.4	168	42.5	168	42.6	168	42.4
436.cactusADM	19.1	626	19.9	600	19.3	619	19.1	626	19.9	600	19.3	619
437.leslie3d	33.1	284	35.1	268	33.7	279	33.1	284	35.1	268	33.7	279
444.namd	302	26.6	302	26.6	302	26.6	295	27.2	295	27.2	295	27.2
447.dealII	194	59.0	194	58.9	194	58.8	194	59.0	194	58.9	194	58.8
450.soplex	184	45.4	185	45.0	186	44.9	184	45.4	185	45.0	186	44.9
453.povray	102	52.0	101	52.9	102	52.0	89.0	59.8	88.3	60.3	87.7	60.7
454.calculix	168	49.0	168	49.1	168	49.0	150	55.0	150	55.0	150	55.0
459.GemsFDTD	51.9	205	53.5	198	52.5	202	44.2	240	44.1	241	44.5	238
465.tonto	267	36.9	267	36.8	267	36.9	197	50.0	197	49.9	197	49.9
470.lbm	21.3	645	21.0	654	21.0	653	21.3	645	21.0	654	21.0	653
481.wrf	124	89.9	118	94.5	134	83.5	124	89.9	118	94.5	134	83.5
482.sphinx3	296	65.9	296	65.9	298	65.4	298	65.4	297	65.7	299	65.2

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

Operating System Notes

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

Platform Notes

Bios Settings:
Intel(R) Hyper-Threading Tech = Disabled
Power & Performance = Performance
Enforce POR = Disabled
Memory Operating Speed Selection = 2133
Set FAN Profile = Performance
Fan PWM Offset = 0

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ACTION S.A.

SPECfp2006 = 105

ACTINA SOLAR 210 X6 (Intel Xeon E5-2620 v4, 2.10 GHz)

SPECfp_base2006 = 98.8

CPU2006 license: 9008

Test date: Jul-2016

Test sponsor: ACTION S.A.

Hardware Availability: Mar-2016

Tested by: ACTION S.A.

Software Availability: Mar-2016

Platform Notes (Continued)

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on SUT Tue Jul 26 20:49:26 2016

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 v4 @ 2.10GHz
 2 "physical id"s (chips)
 16 "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  : 8
  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:      263860684 kB
HugePages_Total:      1
Hugepagesize:    2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.2 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.2"
PRETTY_NAME="Red Hat Enterprise Linux"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
os-release.rpmsave:
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 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server
```

```
uname -a:
Linux SUT 3.10.0-327.18.2.el7.x86_64 #2 SMP Wed Jun 1 17:37:13 CEST 2016
x86_64 x86_64 x86_64 GNU/Linux
```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ACTION S.A.

SPECfp2006 = 105

ACTINA SOLAR 210 X6 (Intel Xeon E5-2620 v4, 2.10 GHz)

SPECfp_base2006 = 98.8

CPU2006 license: 9008

Test date: Jul-2016

Test sponsor: ACTION S.A.

Hardware Availability: Mar-2016

Tested by: ACTION S.A.

Software Availability: Mar-2016

Platform Notes (Continued)

run-level 3 Jul 26 15:13

SPEC is set to: /cpu2006.1.2

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sdal	ext4	212G	133G	69G	66%	/

Additional information from dmidecode:

BIOS Intel Corporation SE5C610.86B.01.01.0016.033120161139 03/31/2016

Memory:

16x 16 GB

16x Hynix HMA42GR7AFR4N-UH 16 GB 2134 MHz 2 rank

8x NO DIMM NO DIMM

(End of data from sysinfo program)

dmidecode does not properly detect memory modules

16 modules of 16 GB were used to run the test (256 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"

OMP_NUM_THREADS = "16"

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

Binaries compiled on a system with 2x Xeon E5-2650 v4 chips + 256 GB memory

using RedHat EL 7.2

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



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ACTION S.A.

ACTINA SOLAR 210 X6 (Intel Xeon E5-2620 v4, 2.10 GHz)

SPECfp2006 = 105

SPECfp_base2006 = 98.8

CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016

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

```

Base Optimization Flags

C benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

```

C++ benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

```

Fortran benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

```

Benchmarks using both Fortran and C:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

```

Peak Compiler Invocation

C benchmarks:

```

icc -m64

```

C++ benchmarks:

```

icpc -m64

```

Fortran benchmarks:

```

ifort -m64

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ACTION S.A.

ACTINA SOLAR 210 X6 (Intel Xeon E5-2620 v4, 2.10 GHz)

SPECfp2006 = 105

SPECfp_base2006 = 98.8

CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016

Peak Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

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) -prof-use(pass 2)
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

C++ benchmarks:

444.namd: -xCORE-AVX2(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: basepeak = yes

453.povray: -xCORE-AVX2(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: 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: basepeak = yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ACTION S.A.

ACTINA SOLAR 210 X6 (Intel Xeon E5-2620 v4, 2.10 GHz)

SPECfp2006 = 105

SPECfp_base2006 = 98.8

CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Jul-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016

Peak Optimization Flags (Continued)

459.GemsFDTD: -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 -opt-prefetch -parallel

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)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevB-aug-2015-For-Intel-Platform.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevB-aug-2015-For-Intel-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 Wed Aug 24 13:14:56 2016 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 23 August 2016.

Standard Performance Evaluation Corporation

info@spec.org

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