



# SPEC<sup>®</sup> CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## ACTION S.A.

ACTINA SOLAR 220 X6 (Intel Xeon E5-2603 v4, 1.70 GHz)

**SPECint<sup>®</sup>2006 = 35.6**

**SPECint\_base2006 = 34.5**

CPU2006 license: 9008

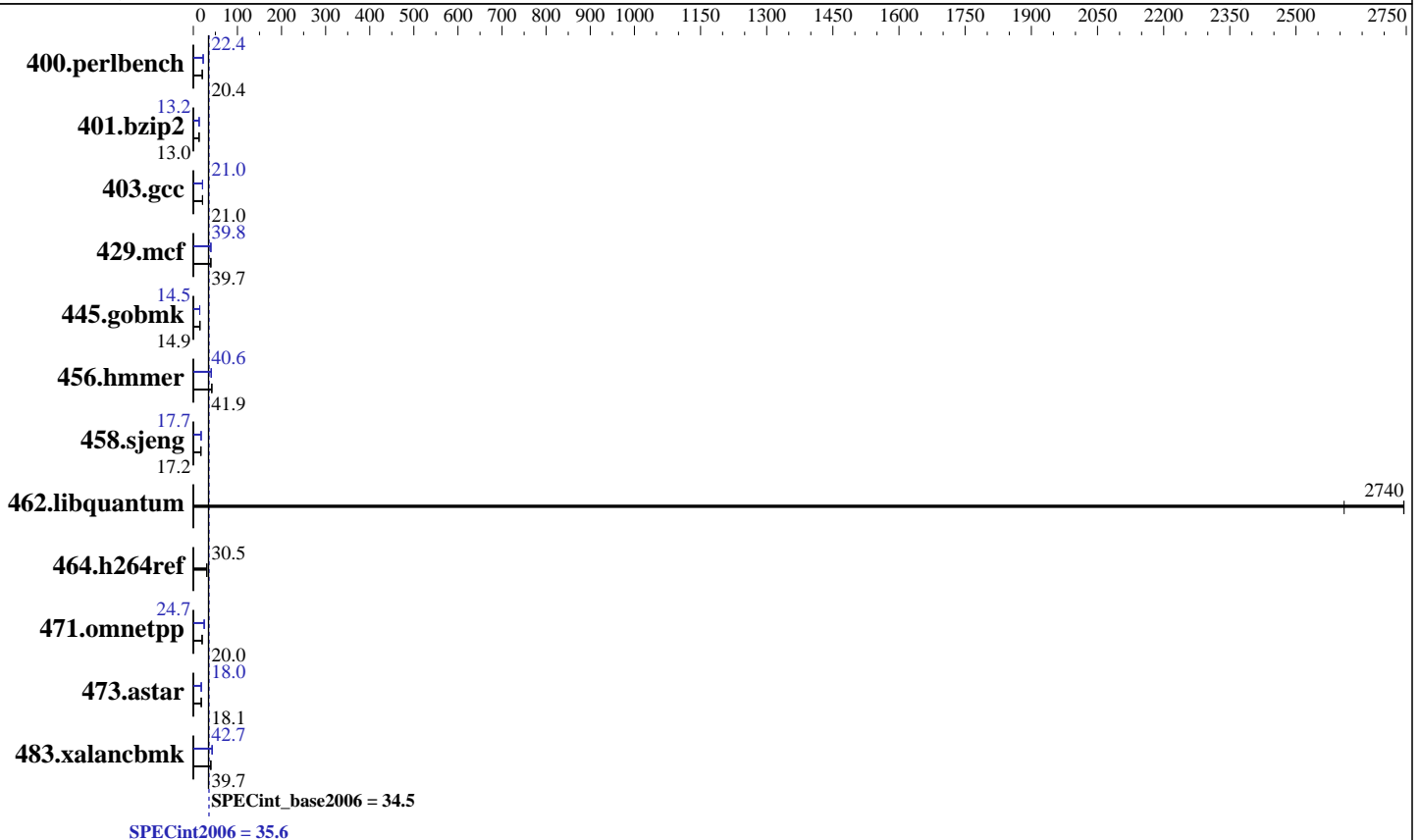
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Sep-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016



### Hardware

CPU Name: Intel Xeon E5-2603 v4  
 CPU Characteristics:  
 CPU MHz: 1700  
 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  
 L3 Cache: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)  
 Disk Subsystem: 1 x 240 GB SATA II SSD  
 Other Hardware: None

### 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  
 Auto Parallel: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## ACTION S.A.

ACTINA SOLAR 220 X6 (Intel Xeon E5-2603 v4, 1.70 GHz)

SPECint2006 = 35.6

SPECint\_base2006 = 34.5

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

Test date: Sep-2016  
Hardware Availability: Mar-2016  
Software Availability: Mar-2016

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	480	20.3	479	20.4	<b>479</b>	<b>20.4</b>	438	22.3	<b>437</b>	<b>22.4</b>	436	22.4
401.bzip2	741	13.0	<b>743</b>	<b>13.0</b>	745	13.0	732	13.2	732	13.2	<b>732</b>	<b>13.2</b>
403.gcc	<b>384</b>	<b>21.0</b>	384	21.0	386	20.9	<b>384</b>	<b>21.0</b>	383	21.0	387	20.8
429.mcf	230	39.6	<b>230</b>	<b>39.7</b>	230	39.7	229	39.8	<b>229</b>	<b>39.8</b>	229	39.8
445.gobmk	702	15.0	703	14.9	<b>702</b>	<b>14.9</b>	722	14.5	<b>721</b>	<b>14.5</b>	721	14.6
456.hammer	<b>223</b>	<b>41.9</b>	223	41.9	223	41.9	230	40.6	<b>230</b>	<b>40.6</b>	230	40.6
458.sjeng	704	17.2	706	17.1	<b>705</b>	<b>17.2</b>	685	17.7	<b>685</b>	<b>17.7</b>	685	17.7
462.libquantum	<b>7.55</b>	<b>2740</b>	7.55	2740	7.94	2610	<b>7.55</b>	<b>2740</b>	7.55	2740	7.94	2610
464.h264ref	<b>725</b>	<b>30.5</b>	726	30.5	725	30.5	<b>725</b>	<b>30.5</b>	726	30.5	725	30.5
471.omnetpp	313	20.0	315	19.9	<b>313</b>	<b>20.0</b>	252	24.8	<b>253</b>	<b>24.7</b>	255	24.5
473.astar	<b>389</b>	<b>18.1</b>	387	18.1	392	17.9	387	18.2	392	17.9	<b>391</b>	<b>18.0</b>
483.xalancbmk	174	39.6	<b>174</b>	<b>39.7</b>	174	39.7	162	42.5	161	42.8	<b>162</b>	<b>42.7</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

Bios Settings:  
Power & Performance = Performance  
Enforce POR = Disabled  
Memory Operating Speed Selection = Auto  
Set FAN Profile = Performance  
Fan PWM Offset = 0

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on SUT Wed Sep 21 10:21:24 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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## ACTION S.A.

ACTINA SOLAR 220 X6 (Intel Xeon E5-2603 v4, 1.70 GHz)

SPECint2006 = 35.6

SPECint\_base2006 = 34.5

CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Sep-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016

### Platform Notes (Continued)

model name : Intel(R) Xeon(R) CPU E5-2603 v4 @ 1.70GHz

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: 263860780 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

run-level 3 Sep 21 10:10

SPEC is set to: /cpu2006.1.2

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sdal	ext4	212G	118G	84G	59%	/

Additional information from dmidecode:

BIOS Intel Corporation SE5C610.86B.11.01.0136.062220161656 06/22/2016

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

**ACTION S.A.**

**SPECint2006 = 35.6**

ACTINA SOLAR 220 X6 (Intel Xeon E5-2603 v4, 1.70 GHz)

**SPECint\_base2006 = 34.5**

**CPU2006 license:** 9008

**Test date:** Sep-2016

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

**Hardware Availability:** Mar-2016

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

**Software Availability:** Mar-2016

## Platform Notes (Continued)

Memory:

16x 16 GB

16x Hynix HMA42GR7AFR4N-TF 16 GB 1866 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 = "12"

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

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

401.bzip2: -DSPEC\_CPU\_LP64

403.gcc: -DSPEC\_CPU\_LP64

429.mcf: -DSPEC\_CPU\_LP64

445.gobmk: -DSPEC\_CPU\_LP64

456.hmmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

464.h264ref: -DSPEC\_CPU\_LP64

471.omnetpp: -DSPEC\_CPU\_LP64

473.astar: -DSPEC\_CPU\_LP64

483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

**ACTION S.A.**

**SPECint2006 = 35.6**

ACTINA SOLAR 220 X6 (Intel Xeon E5-2603 v4, 1.70 GHz)

**SPECint\_base2006 = 34.5**

**CPU2006 license:** 9008

**Test date:** Sep-2016

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

**Hardware Availability:** Mar-2016

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

**Software Availability:** Mar-2016

## Base Optimization Flags

C benchmarks:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32`

C++ benchmarks:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/cpu2006.1.2/sh -lsmartheap64`

## Base Other Flags

C benchmarks:

`403.gcc: -Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):

`icc -m64`

`400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/lib/ia32_lin`

`445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/lib/ia32_lin`

C++ benchmarks:

`471.omnetpp: icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/lib/ia32_lin`

`473.astar: icpc -m64`

`483.xalancbmk: icpc -m32 -L/opt/intel/lib/ia32`

## Peak Portability Flags

`400.perlbench: -DSPEC_CPU_LINUX_IA32`

`401.bzip2: -DSPEC_CPU_LP64`

`403.gcc: -DSPEC_CPU_LP64`

`429.mcf: -DSPEC_CPU_LP64`

`456.hmmer: -DSPEC_CPU_LP64`

`458.sjeng: -DSPEC_CPU_LP64`

`462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

`464.h264ref: -DSPEC_CPU_LP64`

`473.astar: -DSPEC_CPU_LP64`

`483.xalancbmk: -DSPEC_CPU_LINUX`



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

**ACTION S.A.**

ACTINA SOLAR 220 X6 (Intel Xeon E5-2603 v4, 1.70 GHz)

**SPECint2006 = 35.6**

**SPECint\_base2006 = 34.5**

**CPU2006 license:** 9008

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

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

**Test date:** Sep-2016

**Hardware Availability:** Mar-2016

**Software Availability:** Mar-2016

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
 -opt-prefetch -ansi-alias

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
 -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32  
 -opt-prefetch -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc  
 -opt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel  
 -opt-prefetch -auto-p32

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
 -ansi-alias

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
 -ansi-alias

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
 -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
 -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
 -opt-ra-region-strategy=block -ansi-alias  
 -Wl,-z,muldefs -L/cpu2006.1.2/sh -lsmarheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
 -auto-p32 -Wl,-z,muldefs -L/cpu2006.1.2/sh -lsmarheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
 -ansi-alias -Wl,-z,muldefs -L/cpu2006.1.2/sh -lsmarheap

## Peak Other Flags

C benchmarks:

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## ACTION S.A.

ACTINA SOLAR 220 X6 (Intel Xeon E5-2603 v4, 1.70 GHz)

SPECint2006 = 35.6

SPECint\_base2006 = 34.5

CPU2006 license: 9008

Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Sep-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016

## Peak Other Flags (Continued)

403.gcc: -Dalloca=\_alloca

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 SPECint 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 Tue Nov 15 16:05:42 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 15 November 2016.