



# SPEC® CINT2006 Result

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## ACTION S.A.

ACTINA SOLAR 200 X5 (Intel Xeon E5-2609 v2, 2.50 GHz)

**SPECint®\_rate2006 = 248**

**SPECint\_rate\_base2006 = 240**

CPU2006 license: 9008

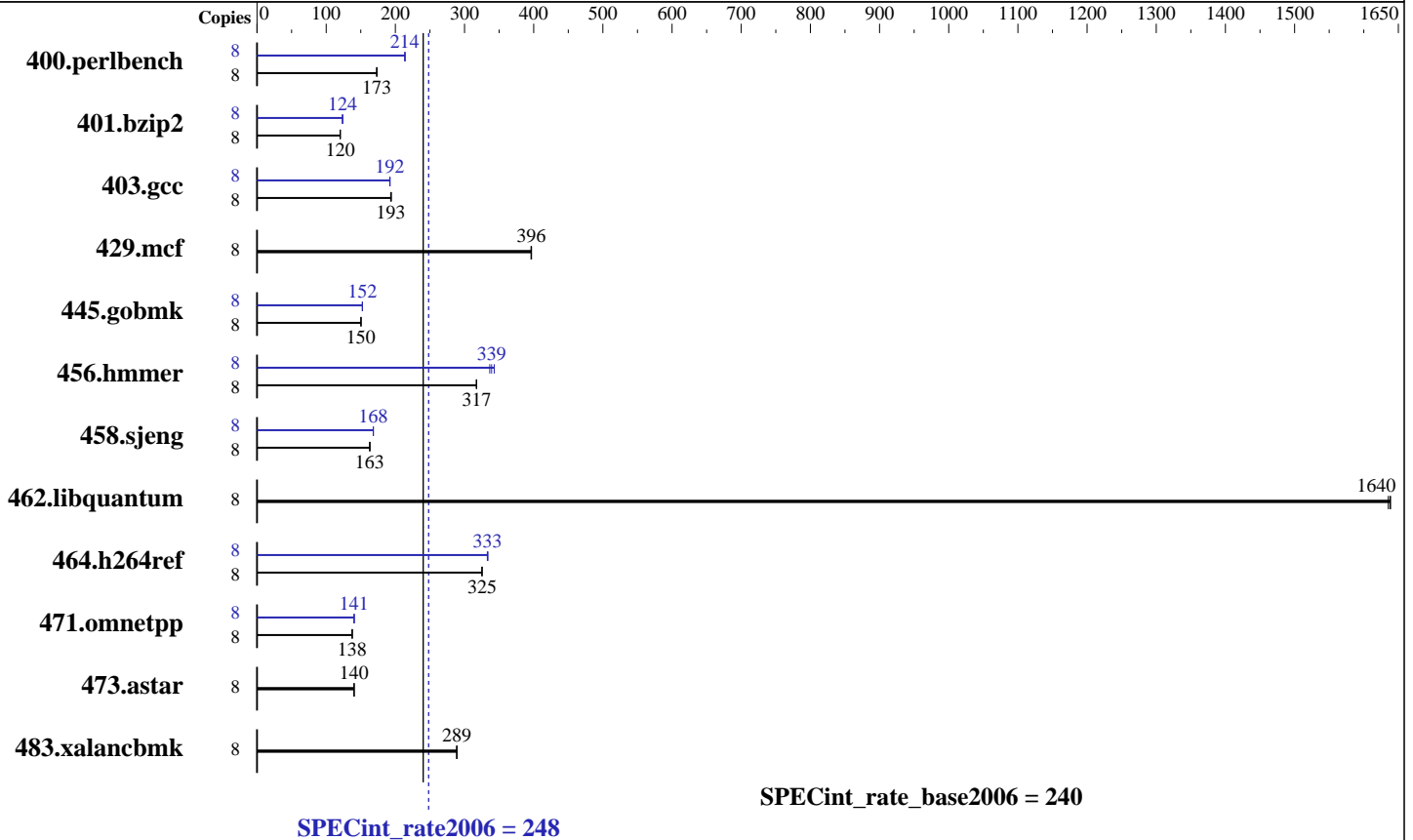
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Apr-2014

Hardware Availability: Oct-2013

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2609 v2  
 CPU Characteristics:  
 CPU MHz: 2500  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 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: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC, running at 1333 MHz and CL9)  
 Disk Subsystem: 1 x 240 GB SATA II SSD  
 Other Hardware: None

### 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  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	<u>451</u>	<u>173</u>	451	173	451	173	8	365	214	<u>365</u>	<u>214</u>	366	214
401.bzip2	8	641	120	642	120	<u>642</u>	<u>120</u>	8	625	123	<u>624</u>	<u>124</u>	623	124
403.gcc	8	333	193	331	194	<u>333</u>	<u>193</u>	8	336	192	335	192	<u>335</u>	<u>192</u>
429.mcf	8	184	396	<u>184</u>	<u>396</u>	184	397	8	184	396	<u>184</u>	<u>396</u>	184	397
445.gobmk	8	<u>558</u>	<u>150</u>	559	150	558	150	8	551	152	<u>551</u>	<u>152</u>	551	152
456.hammer	8	235	317	<u>235</u>	<u>317</u>	235	317	8	218	343	<u>220</u>	<u>339</u>	222	336
458.sjeng	8	<u>593</u>	<u>163</u>	593	163	594	163	8	<u>576</u>	<u>168</u>	576	168	575	168
462.libquantum	8	<u>101</u>	<u>1640</u>	101	1640	101	1640	8	<u>101</u>	<u>1640</u>	101	1640	101	1640
464.h264ref	8	544	325	545	325	<u>544</u>	<u>325</u>	8	530	334	532	333	<u>531</u>	<u>333</u>
471.omnetpp	8	364	138	<u>363</u>	<u>138</u>	363	138	8	<u>356</u>	<u>141</u>	357	140	356	141
473.astar	8	401	140	400	140	<u>400</u>	<u>140</u>	8	401	140	400	140	<u>400</u>	<u>140</u>
483.xalancbmk	8	<u>191</u>	<u>289</u>	191	289	191	289	8	<u>191</u>	<u>289</u>	191	289	191	289

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:

System Acoustic and Performance Configuration = Performance  
Select Memory RAS Configuration = Maximum Performance  
Intel(R) Turbo Boost Technology = Enabled  
Processor C3 = Disabled  
Processor C6 = Disabled

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on localhost.localdomain Wed Apr 2 04:36:07 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

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### Platform Notes (Continued)

model name : Intel(R) Xeon(R) CPU E5-2609 v2 @ 2.50GHz

2 "physical id"s (chips)

8 "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 : 4

siblings : 4

physical 0: cores 0 1 2 3

physical 1: cores 0 1 2 3

cache size : 10240 KB

From /proc/meminfo

MemTotal: 132053000 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 Mar 27 14:51

SPEC is set to: /cpu2006.1.2

Filesystem Type Size Used Avail Use% Mounted on

/dev/sdal ext4 193G 50G 133G 28% /

Additional information from dmidecode:

BIOS Intel Corp. SE5C600.86B.02.02.0002.122320131210 12/23/2013

Memory:

16x 8 GB

16x Hynix HMT31GR7EFR4C-RD 8 GB 1867 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).

Memory modules operate at speed 1333 MHz while dmidecode shows 1867 MHz

### 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"

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## General Notes (Continued)

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 -m32  
  
C++ benchmarks:  
icpc -m32

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
  
C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3  
-Wl,-z,muldefs -L/cpu2006.1.2/sh -lsmartheap

## Base Other Flags

C benchmarks:  
  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc -m32

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## Peak Compiler Invocation (Continued)

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:

`icpc -m32`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`

401.bzip2: `-DSPEC_CPU_LP64`

456.hmmer: `-DSPEC_CPU_LP64`

458.sjeng: `-DSPEC_CPU_LP64`

462.libquantum: `-DSPEC_CPU_LINUX`

483.xalancbmk: `-DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

400.perlbench: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32`

401.bzip2: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32 -ansi-alias`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div`

429.mcf: `basepeak = yes`

445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3`

456.hmmer: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`

458.sjeng: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32`

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## Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs  
-L/cpu2006.1.2/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

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-ic14.0-official-linux64.20140128.html>

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

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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