# SPEC® CINT2006 Result

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## ACTION S.A.

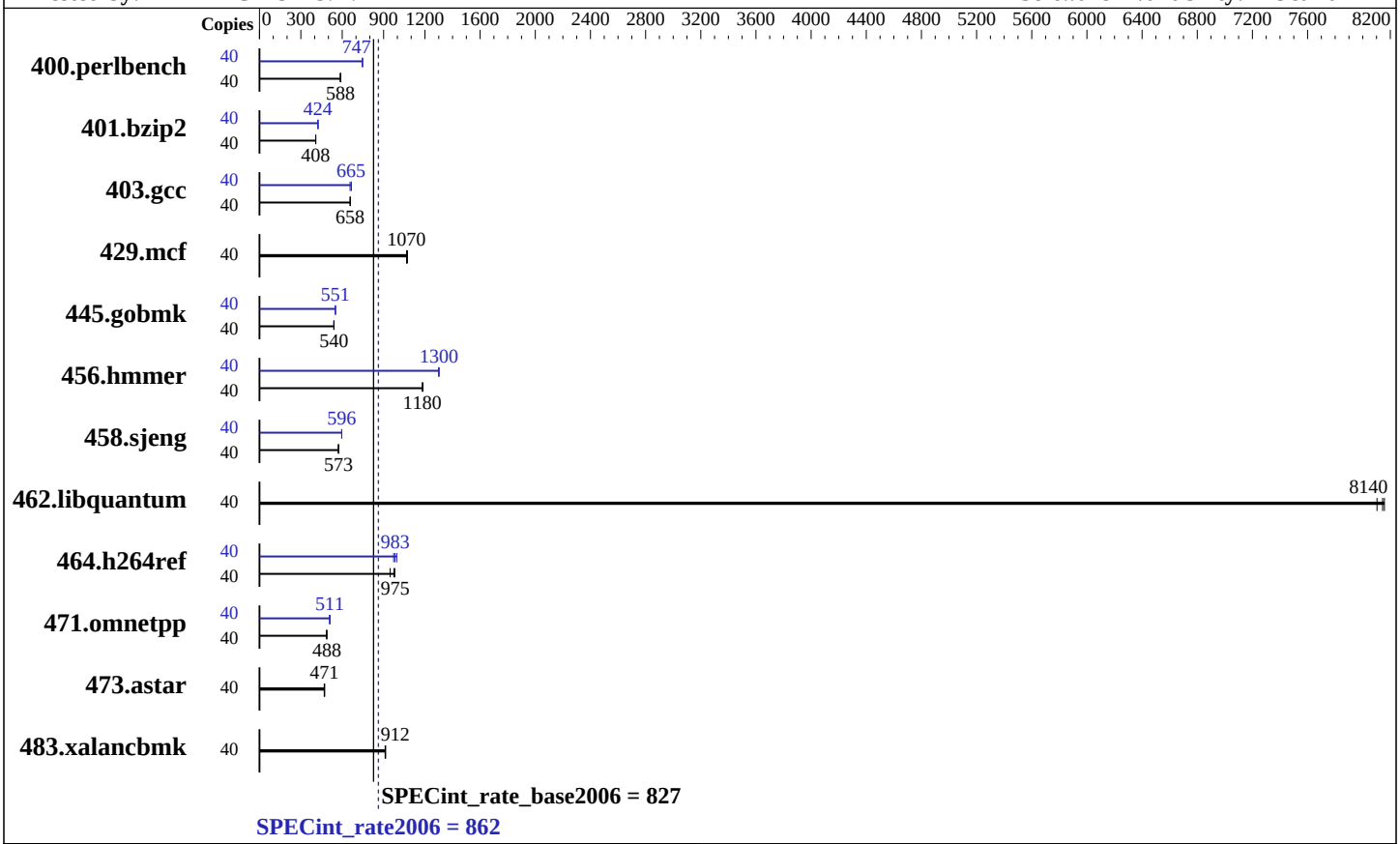
ACTINA SOLAR E 210 S6 (Intel Xeon E5-2650 v3, 2.30 GHz)

SPECint®_rate2006 = 862

SPECint_rate_base2006 = 827

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

**Test date:** Jun-2015
**Hardware Availability:** Sep-2014
**Software Availability:** Oct-2014




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2650 v3 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.00 GHz |
| CPU MHz: | 2300 |
| FPU: | Integrated |
| CPU(s) enabled: | 20 cores, 2 chips, 10 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 |
| L3 Cache: | 25 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R) |
| Disk Subsystem: | 1 x 240 GB SATA II SSD |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 6.6 (Santiago)<br>2.6.32-504.8.1.el6.x86_64 |
| Compiler: | C/C++: Version 15.0.0.090 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 | 40 | **665** | **588** | 664 | 588 | 667 | 586 | 40 | 524 | 746 | **523** | **747** | 523 | 747 |
| 401.bzip2 | 40 | 948 | 407 | 945 | 408 | **946** | **408** | 40 | 910 | 424 | **910** | **424** | 909 | 425 |
| 403.gcc | 40 | **489** | **658** | 490 | 657 | 489 | 659 | 40 | **484** | **665** | 490 | 657 | 483 | 666 |
| 429.mcf | 40 | 340 | 1070 | **342** | **1070** | 342 | 1070 | 40 | 340 | 1070 | **342** | **1070** | 342 | 1070 |
| 445.gobmk | 40 | **777** | **540** | 777 | 540 | 778 | 540 | 40 | 761 | 551 | **762** | **551** | 763 | 550 |
| 456.hmmer | 40 | 316 | 1180 | 315 | 1180 | **316** | **1180** | 40 | 287 | 1300 | **287** | **1300** | 287 | 1300 |
| 458.sjeng | 40 | 845 | 573 | **845** | **573** | 845 | 573 | 40 | 811 | 597 | **812** | **596** | 812 | 596 |
| 462.libquantum | 40 | **102** | **8140** | 102 | 8100 | 102 | 8160 | 40 | **102** | **8140** | 102 | 8100 | 102 | 8160 |
| 464.h264ref | 40 | 902 | 981 | **908** | **975** | 934 | 948 | 40 | **901** | **983** | 910 | 973 | 889 | 996 |
| 471.omnetpp | 40 | **512** | **488** | 516 | 485 | 511 | 489 | 40 | 493 | 508 | **489** | **511** | 489 | 511 |
| 473.astar | 40 | 594 | 473 | **596** | **471** | 598 | 469 | 40 | 594 | 473 | **596** | **471** | 598 | 469 |
| 483.xalancbmk | 40 | **303** | **912** | 303 | 911 | 302 | 915 | 40 | **303** | **912** | 303 | 911 | 302 | 915 |

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
Enforce POR = Disabled
COD Enable = Enable

BMC Setting
Fan Mode = Full Speed

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on SUT Tue Jun  2 11:06:43 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
```

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## Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E5-2650 v3 @ 2.30GHz
      2 "physical id"s (chips)
      40 "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 : 10
      siblings  : 20
      physical 0: cores 0 1 2 3 4 8 9 10 11 12
      physical 1: cores 0 1 2 3 4 8 9 10 11 12
   cache size : 12800 KB

From /proc/meminfo
   MemTotal:       264431916 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.6 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.6 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.6 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux SUT 2.6.32-504.8.1.el6.x86_64 #1 SMP Wed Mar 11 12:12:13 CET 2015
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 2 10:59

SPEC is set to: /cpu2006.1.2
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda1      ext4  212G   39G  162G  20% /

Additional information from dmidecode:
  BIOS American Megatrends Inc. 1.0c 02/12/2015
  Memory:
   16x   16 GB
   1x Micron(date:14/44) 36ASF2G72PZ-2G1A2 16 GB 2133 MHz 2 rank
   1x Micron(date:14/45) 36ASF2G72PZ-2G1A2 16 GB 2133 MHz 2 rank
   5x Micron(date:14/46) 36ASF2G72PZ-2G1A2 16 GB 2133 MHz 2 rank
   9x Micron(date:14/47) 36ASF2G72PZ-2G1A2 16 GB 2133 MHz 2 rank

(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"

 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 6.6
```

## Base Compiler Invocation

C benchmarks:

```
icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

C++ benchmarks:

```
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

## Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Base Optimization Flags

C benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3
```

C++ benchmarks:

```
-xCORE-AVX2 -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 -L/opt/intel/composer_xe_2015/lib/ia32`

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
`icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

## 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: `-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`

401.bzip2: `-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 -auto-ilp32 -ansi-alias`

403.gcc: `-xCORE-AVX2 -ipo -O3 -no-prec-div`

429.mcf: `basepeak = yes`

445.gobmk: `-xCORE-AVX2`(pass 2) `-prof-gen`(pass 1) `-prof-use`(pass 2) `-ansi-alias -opt-mem-layout-trans=3`

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

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 -auto-ilp32`

Continued on next page

## Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(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: -xCORE-AVX2(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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevC-jan-2015-For-Supermicro-Platform.20150225.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.20150225.xml


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