SPEC® CINT2006 Result

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ACTION S.A.

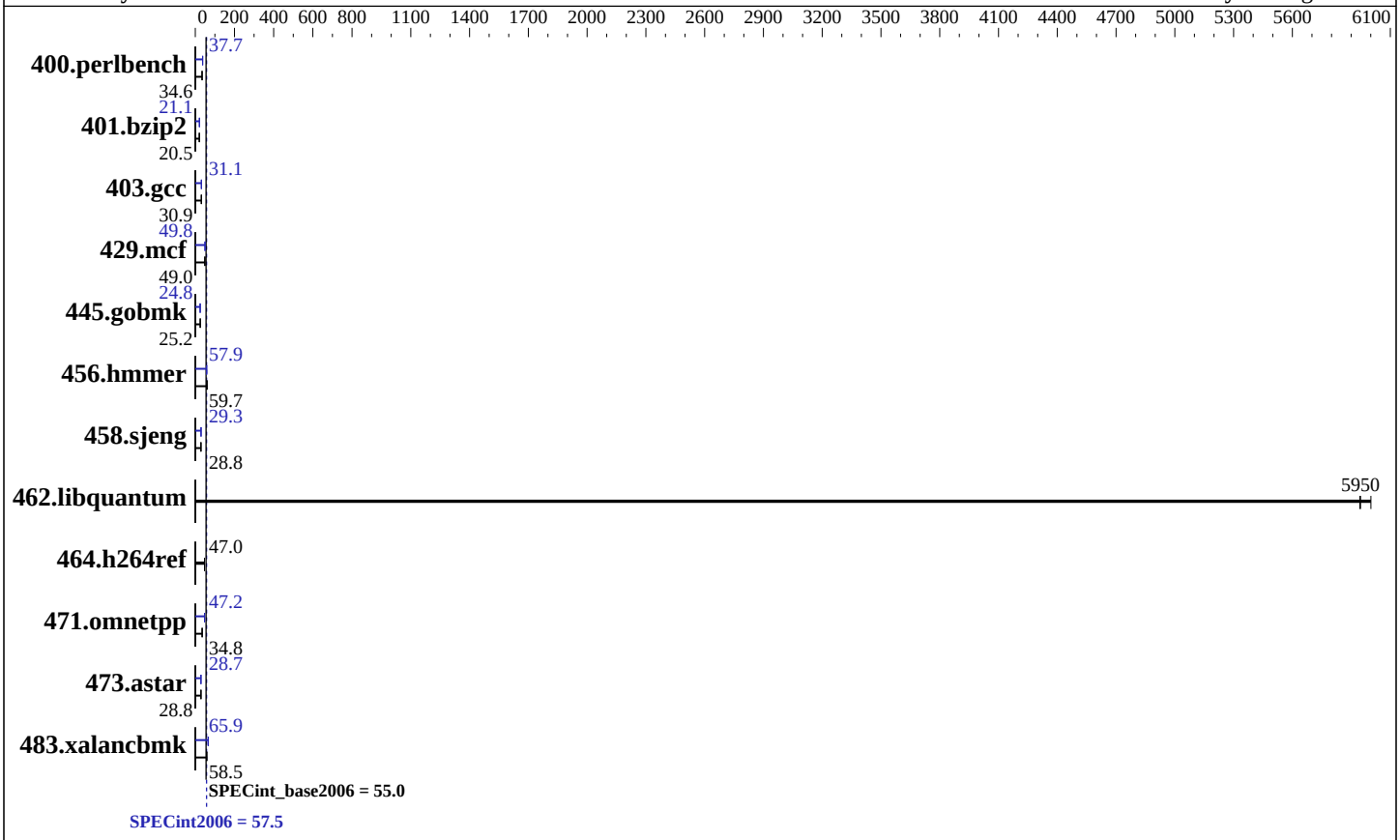
ACTINA SOLAR 222 S6 (Intel Xeon E5-2683 v3, 2.00 GHz)

SPECint®2006 = 57.5

SPECint_base2006 = 55.0

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

Test date: Oct-2015
Hardware Availability: Sep-2014
Software Availability: Aug-2015



Hardware

CPU Name:	Intel Xeon E5-2683 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	28 cores, 2 chips, 14 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:	35 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2400P-R, running at 2133 MHz)
Disk Subsystem:	1 x 240 GB SATA II SSD
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 7.1 (Maipo) 3.10.0-229.11.1.el7.x86_64
Compiler:	C/C++: Version 16.0.0.047 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

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**283**	**34.6**	283	34.5	281	34.8	258	37.8	**259**	**37.7**	265	36.9
401.bzip2	472	20.5	469	20.6	**471**	**20.5**	**457**	**21.1**	457	21.1	457	21.1
403.gcc	259	31.0	**261**	**30.9**	261	30.9	257	31.3	**259**	**31.1**	259	31.0
429.mcf	187	48.7	**186**	**49.0**	186	49.1	183	49.8	184	49.6	**183**	**49.8**
445.gobmk	416	25.2	**416**	**25.2**	417	25.2	423	24.8	422	24.8	**422**	**24.8**
456.hmmer	156	59.7	**156**	**59.7**	156	59.7	**161**	**57.9**	161	57.8	161	58.0
458.sjeng	421	28.7	**420**	**28.8**	420	28.8	413	29.3	413	29.3	**413**	**29.3**
462.libquantum	3.45	6000	**3.48**	**5950**	3.49	5940	3.45	6000	**3.48**	**5950**	3.49	5940
464.h264ref	472	46.9	**471**	**47.0**	471	47.0	472	46.9	**471**	**47.0**	471	47.0
471.omnetpp	179	34.8	177	35.3	**179**	**34.8**	132	47.5	133	47.1	**132**	**47.2**
473.astar	242	29.1	244	28.7	**244**	**28.8**	243	28.9	**244**	**28.7**	245	28.7
483.xalancbmk	118	58.5	118	58.4	**118**	**58.5**	105	65.5	**105**	**65.9**	105	66.0

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
Hyper-Threading (All) = Disable
Power Technology = Energy Efficient
Enforce POR = Disabled
Memory Frequency = 2133
COD Enable = Disable

BMC Setting
Fan Mode = Full Speed

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on SUT Mon Oct 19 16:11:31 2015

This section contains SUT (System Under Test) info as seen by
some common utilities.  To remove or add to this section, see:
```

Continued on next page

Platform Notes (Continued)

```
      http://www.spec.org/cpu2006/Docs/config.html#sysinfo

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz
          2 "physical id"s (chips)
          28 "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 : 14
          siblings  : 14
          physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
          physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
       cache size : 35840 KB

    From /proc/meminfo
       MemTotal:       263867524 kB
       HugePages_Total:       1
       Hugepagesize:       2048 kB

    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"
       os-release.rpmnew:
          NAME="Red Hat Enterprise Linux Server"
          VERSION="7.1 (Maipo)"
          ID="rhel"
          ID_LIKE="fedora"
          VERSION_ID="7.1"
          PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
          ANSI_COLOR="0;31"
          CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
       redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
       system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
       system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server

    uname -a:
       Linux SUT 3.10.0-229.11.1.el7.x86_64 #5 SMP Mon Sep 14 17:11:19 CEST 2015
       x86_64 x86_64 x86_64 GNU/Linux

    run-level 3 Oct 19 16:10

    SPEC is set to: /cpu2006.1.2
       Filesystem     Type  Size  Used Avail Use% Mounted on
       /dev/sda1      ext4  212G   37G  165G  19% /
```

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Platform Notes (Continued)

```
 Additional information from dmidecode:
   BIOS American Megatrends Inc. 1.0c 01/07/2015
   Memory:
    16x   16 GB
    16x Hynix Semiconductor (date:15/28) HMA42GR7AFR4N-UH 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"
OMP_NUM_THREADS = "28"

 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 v3 chips + 256 GB memory
 using RedHat EL 7.1
```

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.hmmer: -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
```

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/lib/ia32`

445.gobmk: `icc -m32 -L/opt/intel/lib/ia32`

C++ benchmarks (except as noted below):
`icpc -m32 -L/opt/intel/lib/ia32`

473.astar: `icpc -m64`

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`

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 -lsmartheap

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

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

Peak Other Flags

C benchmarks:

Continued on next page

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-RevD-aug-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-ic16.0-official-linux64.xml`
`http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevD-aug-2015-For-Supermicro-Platform.xml`

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Nov 17 19:14:58 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 November 2015.