SPEC® CINT2006 Result

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ACTION S.A.

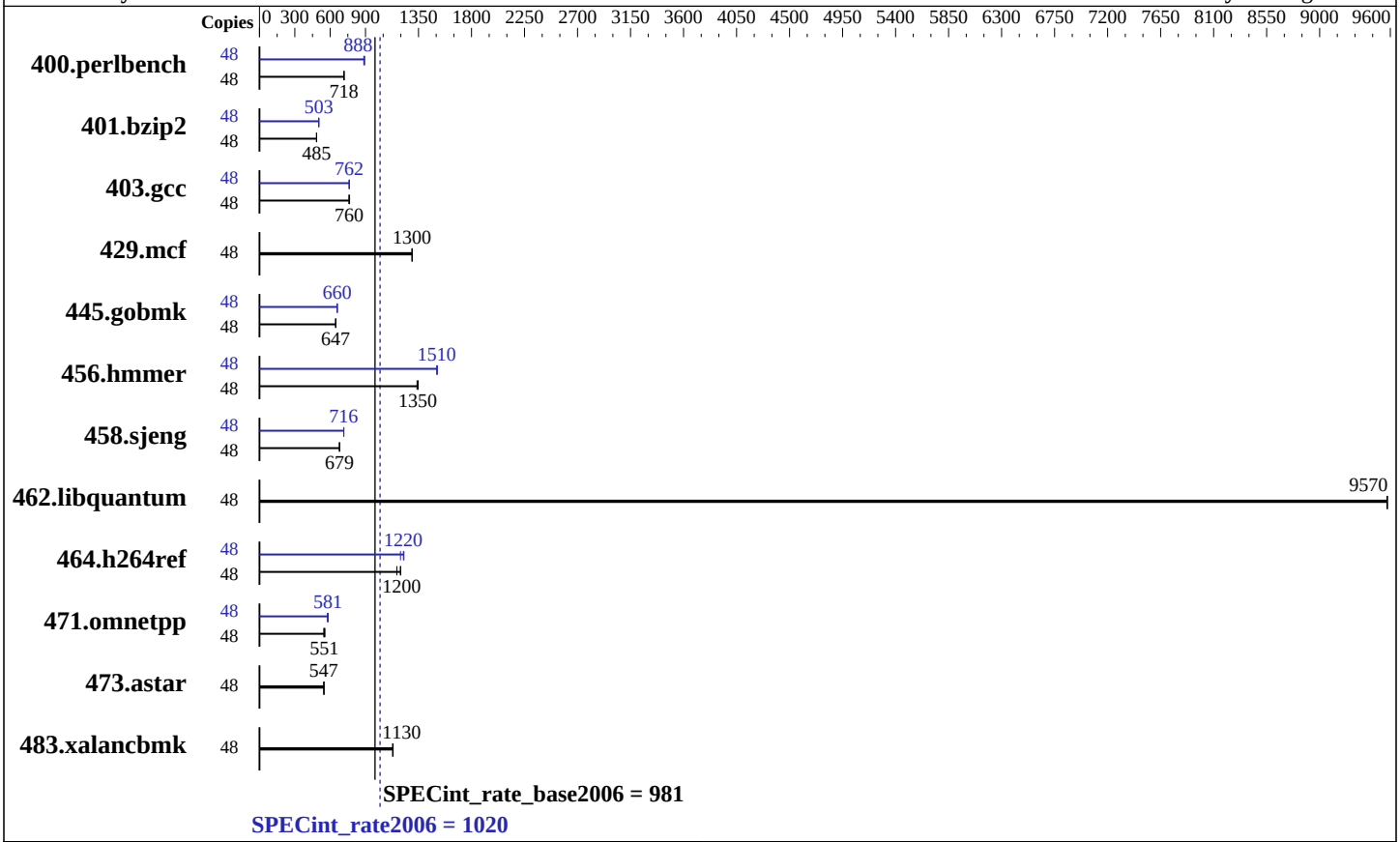
ACTINA SOLAR 222 S6 (Intel Xeon E5-2670 v3, 2.30 GHz)

SPECint®_rate2006 = 1020

SPECint_rate_base2006 = 981

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 E5-2670 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz:	2300
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 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:	30 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:	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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	48	**653**	**718**	652	719	655	716	48	525	893	529	886	**528**	**888**
401.bzip2	48	**956**	**485**	954	485	958	484	48	918	505	**921**	**503**	923	502
403.gcc	48	**508**	**760**	508	760	505	765	48	508	761	507	763	**507**	**762**
429.mcf	48	338	1300	**338**	**1300**	338	1300	48	338	1300	**338**	**1300**	338	1300
445.gobmk	48	**778**	**647**	778	647	778	647	48	763	660	**763**	**660**	763	660
456.hmmer	48	335	1340	**333**	**1350**	333	1350	48	297	1510	**297**	**1510**	297	1510
458.sjeng	48	855	679	855	679	**855**	**679**	48	811	716	812	715	**812**	**716**
462.libquantum	48	104	9580	**104**	**9570**	104	9570	48	104	9580	**104**	**9570**	104	9570
464.h264ref	48	**888**	**1200**	911	1170	886	1200	48	866	1230	**869**	**1220**	887	1200
471.omnetpp	48	540	556	**545**	**551**	550	546	48	**516**	**581**	520	576	515	582
473.astar	48	615	548	**616**	**547**	616	547	48	615	548	**616**	**547**	616	547
483.xalancbmk	48	293	1130	292	1130	**292**	**1130**	48	293	1130	292	1130	**292**	**1130**

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) = Enable
Power Technology = Energy Efficient
Enforce POR = Disabled
Memory Frequency = 2133
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 Wed Oct 28 09:32:38 2015

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

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Platform Notes (Continued)

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

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E5-2670 v3 @ 2.30GHz
          2 "physical id"s (chips)
          48 "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 : 12
          siblings  : 24
          physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
          physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
       cache size : 15360 KB

    From /proc/meminfo
       MemTotal:       263864620 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 28 09:32

    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"

 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 7.1
```

Base Compiler Invocation

C benchmarks:

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

C++ benchmarks:

```
icpc -m32 -L/opt/intel/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
```

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Base Optimization Flags (Continued)

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/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/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`

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Peak Optimization Flags (Continued)

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

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-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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Tested with SPEC CPU2006 v1.2.
Report generated on Tue Nov 17 19:14:57 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 November 2015.