



SPEC® CINT2006 Result

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ACTION S.A.

ACTINA SOLAR 440 Q5 (Intel Xeon E5-4650, 2.70 GHz)

SPECint®_rate2006 = 1230

SPECint_rate_base2006 = 1190

CPU2006 license: 9008

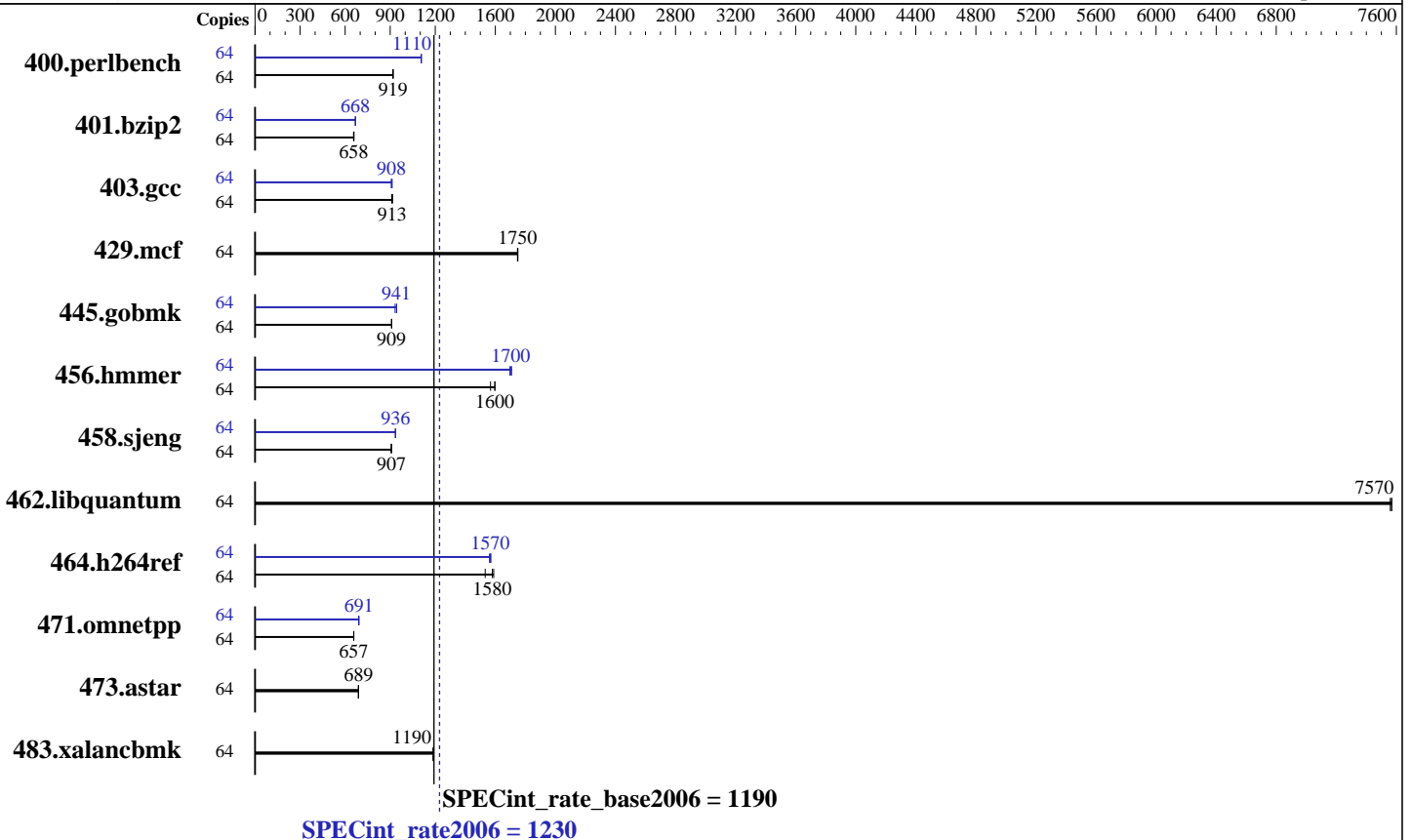
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Dec-2013

Hardware Availability: Jul-2012

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-4650
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2700
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 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: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 512 GB (32 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz and CL11)
 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	64	680	920	681	918	680	919	64	565	1110	565	1110	565	1110		
401.bzip2	64	939	658	942	656	938	659	64	923	669	924	668	925	668		
403.gcc	64	566	911	563	915	564	913	64	564	913	568	908	567	908		
429.mcf	64	334	1750	333	1750	334	1750	64	334	1750	333	1750	334	1750		
445.gobmk	64	738	910	739	909	738	909	64	720	932	712	943	713	941		
456.hammer	64	381	1570	374	1600	374	1600	64	351	1700	349	1710	352	1700		
458.sjeng	64	853	908	853	907	853	907	64	827	936	827	937	830	933		
462.libquantum	64	175	7570	175	7570	175	7560	64	175	7570	175	7570	175	7560		
464.h264ref	64	896	1580	924	1530	891	1590	64	904	1570	907	1560	902	1570		
471.omnetpp	64	608	657	609	657	608	658	64	579	691	579	691	580	690		
473.astar	64	654	687	652	689	652	690	64	654	687	652	689	652	690		
483.xalancbmk	64	372	1190	372	1190	372	1190	64	372	1190	372	1190	372	1190		

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

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Wed Dec 4 14:58:10 2013

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
model name : Intel(R) Xeon(R) CPU E5-4650 0 @ 2.70GHz
4 "physical id"s (chips)
64 "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 : 8
siblings : 16

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Platform Notes (Continued)

```

physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
physical 2: cores 0 1 2 3 4 5 6 7
physical 3: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

```

From /proc/meminfo

```

MemTotal:      529243052 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 Dec 3 23:39

SPEC is set to: /cpu2006.1.2

```

Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal       ext4      193G   65G  118G  36% /

```

Additional information from dmidecode:

BIOS American Megatrends Inc. S4E_3A10 09/20/2012

Memory:

```

1x ChannelA_Dimm2_Manufacturer ChannelA_Dimm2_PartNum
1x ChannelB_Dimm2_Manufacturer ChannelB_Dimm2_PartNum
1x ChannelC_Dimm2_Manufacturer ChannelC_Dimm2_PartNum
1x ChannelD_Dimm2_Manufacturer ChannelD_Dimm2_PartNum
1x ChannelE_Dimm2_Manufacturer ChannelE_Dimm2_PartNum
1x ChannelF_Dimm2_Manufacturer ChannelF_Dimm2_PartNum
1x ChannelG_Dimm2_Manufacturer ChannelG_Dimm2_PartNum
1x ChannelH_Dimm2_Manufacturer ChannelH_Dimm2_PartNum
1x ChannelJ_Dimm2_Manufacturer ChannelJ_Dimm2_PartNum
1x ChannelK_Dimm2_Manufacturer ChannelK_Dimm2_PartNum
1x ChannelL_Dimm2_Manufacturer ChannelL_Dimm2_PartNum
1x ChannelM_Dimm2_Manufacturer ChannelM_Dimm2_PartNum
1x ChannelN_Dimm2_Manufacturer ChannelN_Dimm2_PartNum
1x ChannelP_Dimm2_Manufacturer ChannelP_Dimm2_PartNum
1x ChannelR_Dimm2_Manufacturer ChannelR_Dimm2_PartNum
1x ChannelT_Dimm2_Manufacturer ChannelT_Dimm2_PartNum
16x Hynix Semiconductor HMT42GR7AFR4C-RD 16 GB 1600 MHz 1 rank
16x Samsung M393B2G70BH0-CMA 16 GB 1600 MHz 1 rank

```

(End of data from sysinfo program)

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Platform Notes (Continued)

dmidecode does not properly display memory modules,
32 modules of 16 GB 2 rank were used to run the test (512 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 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



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Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32

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

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Peak Optimization Flags (Continued)

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

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 file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>



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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 19:49:59 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 18 February 2014.