SPEC® CINT2006 Result

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Sugon

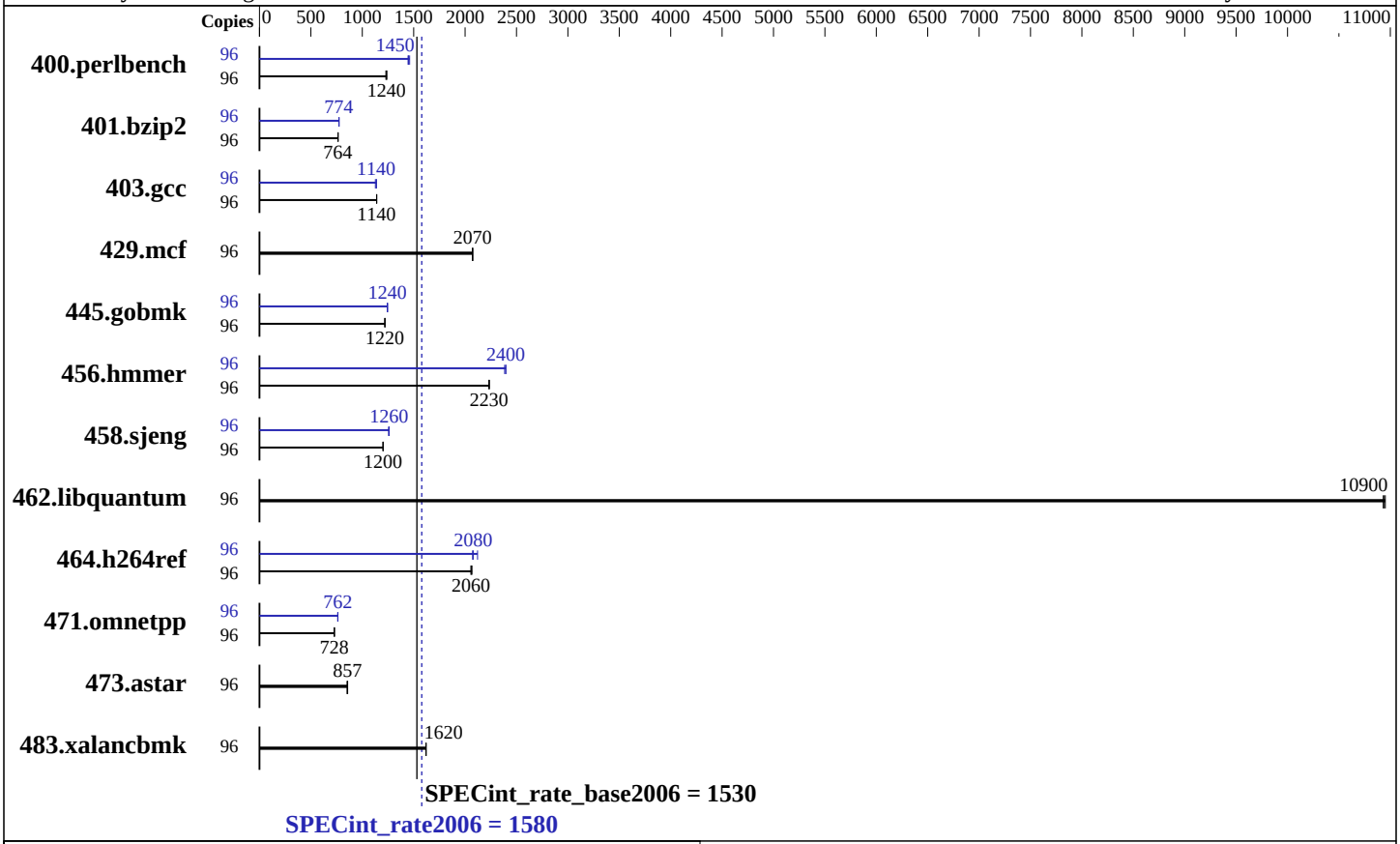
Sugon I840-G25 (Intel Xeon E7-4850 v2)

SPECint®_rate2006 = 1580

SPECint_rate_base2006 = 1530

CPU2006 license: 9046
Test sponsor: Sugon
Tested by: Sugon

Test date: Jun-2014
Hardware Availability: Jun-2014
Software Availability: Nov-2013



Hardware

CPU Name:	Intel Xeon E7-4850 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2300
FPU:	Integrated
CPU(s) enabled:	48 cores, 4 chips, 12 cores/chip, 2 threads/core
CPU(s) orderable:	2,4 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	24 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64 x 16 GB 2Rx4 PC3L-12800R-11, running at 1067 MHz, ECC)
Disk Subsystem:	1 x 300 GB SATA Disk
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.5 (Santiago) 2.6.32-431.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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	96	763	1230	**759**	**1240**	757	1240	96	**647**	**1450**	649	1450	642	1460
401.bzip2	96	1213	764	**1212**	**764**	1212	764	96	1197	774	1199	773	**1197**	**774**
403.gcc	96	**678**	**1140**	677	1140	678	1140	96	679	1140	**680**	**1140**	686	1130
429.mcf	96	422	2070	**422**	**2070**	422	2070	96	422	2070	**422**	**2070**	422	2070
445.gobmk	96	826	1220	**825**	**1220**	825	1220	96	808	1250	810	1240	**809**	**1240**
456.hmmer	96	**401**	**2230**	401	2230	401	2240	96	376	2380	**374**	**2400**	374	2400
458.sjeng	96	**966**	**1200**	967	1200	966	1200	96	**922**	**1260**	921	1260	925	1260
462.libquantum	96	182	10900	182	11000	**182**	**10900**	96	182	10900	182	11000	**182**	**10900**
464.h264ref	96	**1032**	**2060**	1028	2070	1032	2060	96	**1021**	**2080**	1025	2070	1002	2120
471.omnetpp	96	**824**	**728**	824	729	824	728	96	787	763	**787**	**762**	788	762
473.astar	96	791	851	786	858	**787**	**857**	96	791	851	786	858	**787**	**857**
483.xalancbmk	96	409	1620	**409**	**1620**	409	1620	96	409	1620	**409**	**1620**	409	1620

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 Configuration:
Power Technology set to performance
T-state set to disable
C6 report set to disable
 Sysinfo program /home/cpu2006/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on localhost.localdomain Fri Jun 13 17:59:42 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
    model name : Intel(R) Xeon(R) CPU E7-4850 v2 @ 2.30GHz
       4 "physical id"s (chips)
       96 "processors"
    cores, siblings (Caution: counting these is hw and system dependent.  The
```

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Platform Notes (Continued)

```
      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
         physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13
         physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13
      cache size : 24576 KB

   From /proc/meminfo
      MemTotal:       1058645432 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   /usr/bin/lsb_release -d
      Red Hat Enterprise Linux Server release 6.5 (Santiago)

   From /etc/*release* /etc/*version*
      redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
      system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

   uname -a:
      Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54
      EST 2013 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Jun 13 02:17

   SPEC is set to: /home/cpu2006
      Filesystem                Type  Size  Used Avail Use% Mounted on
      /dev/mapper/VolGroup-lv_home ext4  239G   86G  142G  38% /home

   Additional information from dmidecode:
     BIOS American Megatrends Inc. 1.0 04/11/2014
     Memory:
      64x   16 GB
      32x NO DIMM NO DIMM
      32x Samsung M393B2G70DB0-YK0 16 GB 1067 MHz 2 rank
      32x Samsung M393B2G70QH0-YK0 16 GB 1067 MHz 2 rank

   (End of data from sysinfo program)
The memory info above is read from dmidecode,the capacity is actually 1 TB.
The confusing display caused by old version sysinfo in benchmark suite, and
it has nothing to do with the system performance.
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
```

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General Notes (Continued)

```
 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 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>

Submitted_by: Tian Yuwan <tianyw@sugon.com>
Submitted: Thu Oct 30 23:04:20 EDT 2014
Submission: cpu2006-20140914-31534.sub
```

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/sh -lsmartheap
```

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

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/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-linux64.20141104.html
http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-IVB.20141104.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20141104.xml
http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-IVB.20141104.00.xml

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Tested with SPEC CPU2006 v1.2.
Report generated on Tue Nov 4 12:49:32 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 4 November 2014.