SPEC® CINT2006 Result

SGI

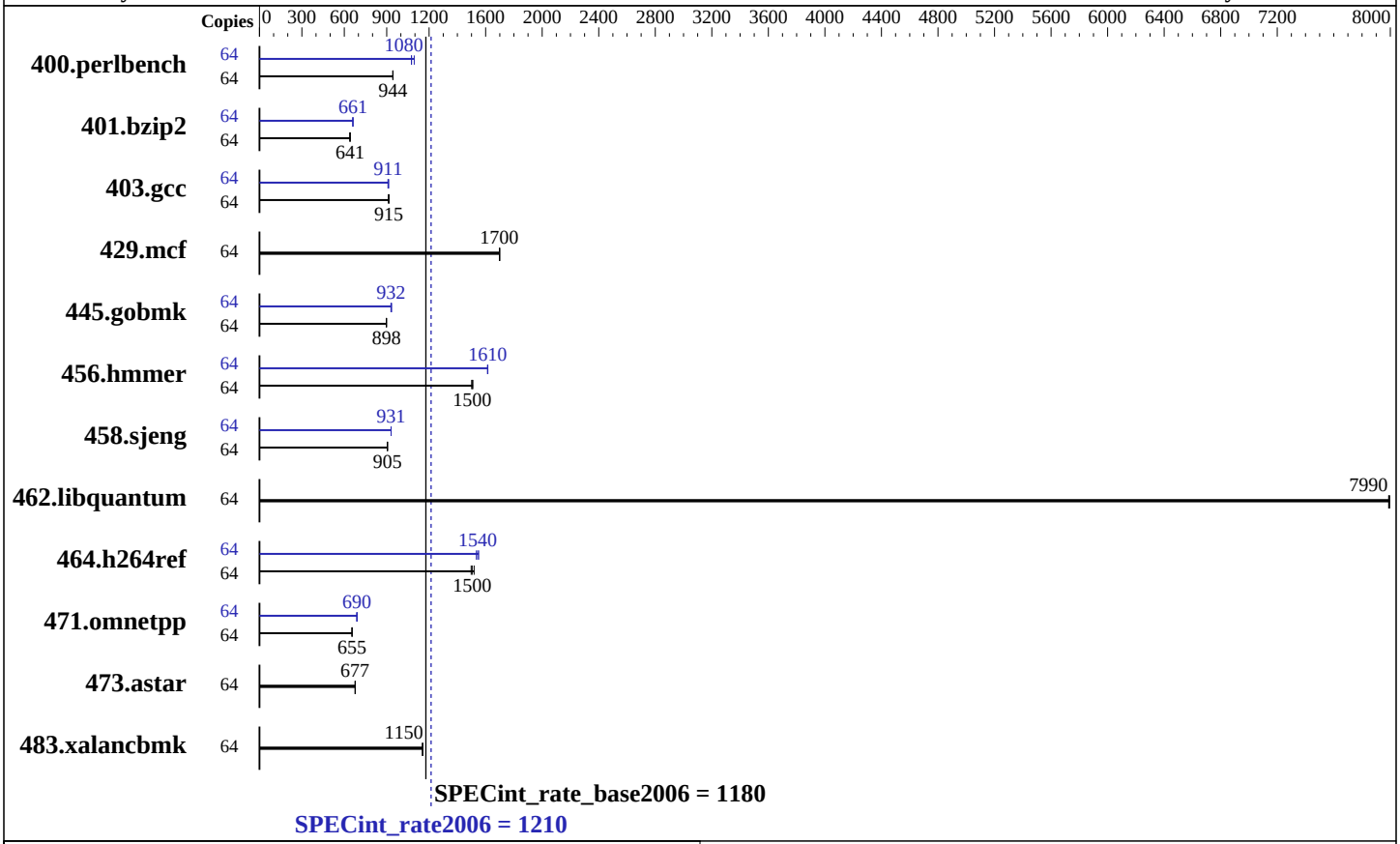
SGI UV 20 (Intel Xeon E5-4650, 2.70 GHz)

SPECint®_rate2006 = 1210

SPECint_rate_base2006 = 1180

CPU2006 license: 4
Test sponsor: SGI
Tested by: SGI

Test date: Mar-2013
Hardware Availability: Nov-2012
Software Availability: Feb-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:	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:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	512 GB (32 x 16 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	3.3 TB RAID 0 6 x 600 GB, SSD
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) kernel 3.0.42-0.7-default
Compiler:	C/C++: Version 13.0.0.133 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

SPEC CINT2006 Result

SGI

SGI UV 20 (Intel Xeon E5-4650, 2.70 GHz)

SPECint_rate2006 = 1210

SPECint_rate_base2006 = 1180

CPU2006 license: 4
Test sponsor: SGI
Tested by: SGI

Test date: Mar-2013
Hardware Availability: Nov-2012
Software Availability: Feb-2013

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	64	663	943	662	945	**662**	**944**	64	**581**	**1080**	571	1090	582	1070
401.bzip2	64	961	642	**963**	**641**	968	638	64	934	661	935	660	**934**	**661**
403.gcc	64	562	916	**563**	**915**	565	912	64	567	909	**565**	**911**	563	914
429.mcf	64	**344**	**1700**	344	1700	343	1700	64	**344**	**1700**	344	1700	343	1700
445.gobmk	64	748	898	**747**	**898**	747	898	64	718	935	722	930	**721**	**932**
456.hmmer	64	396	1510	398	1500	**397**	**1500**	64	370	1620	370	1610	**370**	**1610**
458.sjeng	64	856	905	**855**	**905**	855	906	64	**832**	**931**	831	931	832	931
462.libquantum	64	**166**	**7990**	166	7990	166	8000	64	**166**	**7990**	166	7990	166	8000
464.h264ref	64	**941**	**1500**	933	1520	946	1500	64	913	1550	**917**	**1540**	923	1530
471.omnetpp	64	610	655	**611**	**655**	611	655	64	**580**	**690**	579	691	581	688
473.astar	64	663	678	664	677	**664**	**677**	64	663	678	664	677	**664**	**677**
483.xalancbmk	64	382	1150	**383**	**1150**	383	1150	64	382	1150	**383**	**1150**	383	1150

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 /store/cma/cpu2006-v1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on cy020 Sun Mar 10 16:51:38 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
```

Continued on next page

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:       529360176 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     SUSE Linux Enterprise Server 11 (x86_64)

  From /etc/*release* /etc/*version*
     SuSE-release:
        SUSE Linux Enterprise Server 11 (x86_64)
        VERSION = 11
        PATCHLEVEL = 2
     sgi-accelerate-release: SGI Accelerate 1.5, Build 707r85.sles11sp2-1302142007
     sgi-foundation-release: SGI Foundation Software 2.7, Build
     707r85.sles11sp2-1302142007
     sgi-mpi-release: SGI MPI 1.5, Build 707r85.sles11sp2-1302142007
     sgi-propack-release: SGI ProPack 706 for Linux, Build
     706rp51.sles11sp2-1210312107
     sgi-release: SGI Performance Suite 1.5, Build 707r85.sles11sp2-1302142007
     sgi-upc-release: SGI UPC 1.5, Build 707r85.sles11sp2-1302142007

  uname -a:
     Linux cy020 3.0.42-0.7-default #1 SMP Tue Oct 9 11:58:45 UTC 2012 (a8dc443)
     x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Mar 4 10:31 last=S

  SPEC is set to: /store/cma/cpu2006-v1.2
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sdc1      xfs   3.3T  834G  2.5T  25% /scratch

  Cannot run dmidecode; consider saying 'chmod +s /usr/sbin/dmidecode'

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/store/cma/cpu2006-v1.2/libs/32:/store/cma/cpu2006-v1.2/libs/64:/store/cma/cpu2006-v1.2/sh"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RHEL5.5
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

Continued on next page

General Notes (Continued)

```
Filesystem page cache cleared with:
echo 1>       /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

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:
`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`

C++ benchmarks:
`-xAVX -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`

Continued on next page

Peak Compiler Invocation (Continued)

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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

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

456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias

Continued on next page

Peak Optimization Flags (Continued)

C++ benchmarks:

471.omnetpp: `-xAVX`(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-ic13-official-linux64.html
http://www.spec.org/cpu2006/flags/SGI-platform.20120912.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.xml
http://www.spec.org/cpu2006/flags/SGI-platform.20120912.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 15:32:51 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 7 May 2013.