SPEC® CINT2006 Result

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SGI

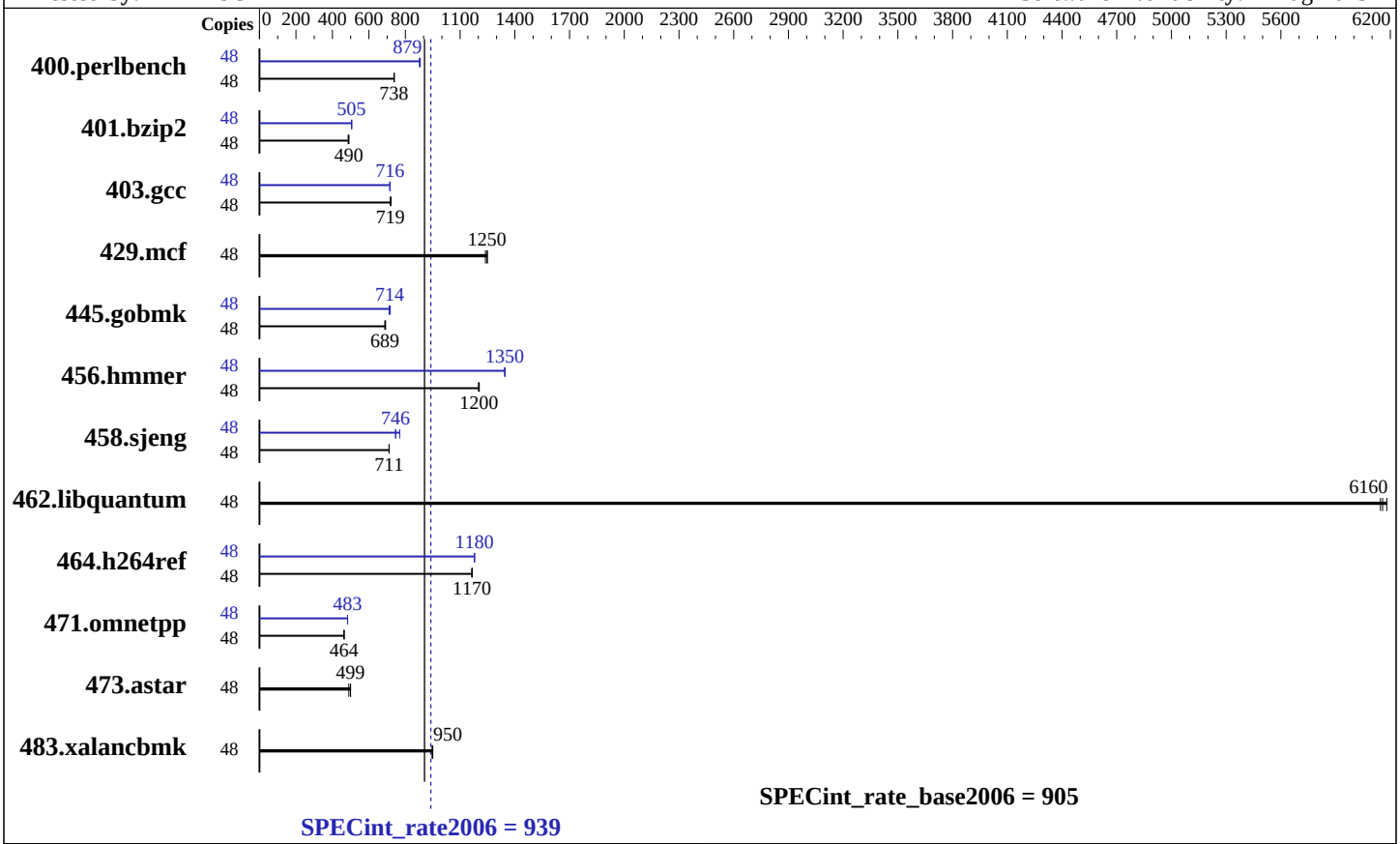
SGI Rackable C2112-4RP4 (Intel Xeon E5-2697 v2, 2.70 GHz)

SPECint®_rate2006 = 939

SPECint_rate_base2006 = 905

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

Test date: Aug-2013
Hardware Availability: Sep-2013
Software Availability: Aug-2013



Hardware

CPU Name:	Intel Xeon E5-2697 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	2700
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 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:	30 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	2 x 600 GB SAS, 15000 RPM
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) SP2, kernel 3.0.74-0.6.6-default
Compiler:	C/C++: Version 14.0.0.080 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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	48	635	739	636	738	**635**	**738**	48	532	882	**534**	**879**	535	877
401.bzip2	48	**946**	**490**	953	486	946	490	48	**917**	**505**	915	506	919	504
403.gcc	48	538	718	536	721	**538**	**719**	48	**540**	**716**	539	716	541	714
429.mcf	48	**351**	**1250**	350	1250	353	1240	48	**351**	**1250**	350	1250	353	1240
445.gobmk	48	**731**	**689**	732	688	728	691	48	702	717	709	711	**706**	**714**
456.hmmer	48	373	1200	**372**	**1200**	372	1200	48	333	1340	**333**	**1350**	333	1350
458.sjeng	48	**817**	**711**	817	711	817	711	48	756	769	**778**	**746**	779	746
462.libquantum	48	**162**	**6160**	162	6150	161	6180	48	**162**	**6160**	162	6150	161	6180
464.h264ref	48	913	1160	**911**	**1170**	910	1170	48	902	1180	901	1180	**901**	**1180**
471.omnetpp	48	647	463	647	464	**647**	**464**	48	621	483	**621**	**483**	621	483
473.astar	48	688	490	**676**	**499**	675	500	48	688	490	**676**	**499**	675	500
483.xalancbmk	48	**349**	**950**	350	946	349	950	48	**349**	**950**	350	946	349	950

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 /scratch_local/cpu2006-v1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on n013 Tue Aug 20 00:17:06 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 E5-2697 v2 @ 2.70GHz
      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
```

Continued on next page

Platform Notes (Continued)

```
        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 : 30720 KB

  From /proc/meminfo
     MemTotal:       132068080 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 1.6, Build 708r14.sles11sp2-1304102205
     sgi-foundation-release: SGI Foundation Software 2.8, Build
     708r14.sles11sp2-1304102205
     sgi-mpi-release: SGI MPI 1.6, Build 708r14.sles11sp2-1304102205
     sgi-upc-release: SGI UPC 1.6, Build 708r14.sles11sp2-1304102205

  uname -a:
     Linux n013 3.0.74-0.6.6-default #1 SMP Thu Apr 25 12:25:38 UTC 2013 (395d734)
     x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Aug 2 06:38 last=S

  SPEC is set to: /scratch_local/cpu2006-v1.2
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/md3       xfs  1012G  5.4G 1006G   1% /scratch_local

  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 = "/scratch_local/cpu2006-v1.2/libs/32:/scratch_local/cpu2006-v1.2/libs/64:/scratch_local/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/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>
```

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

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

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-ic14.0-official-linux64.20140128.html`
`http://www.spec.org/cpu2006/flags/SGI-platform-2S.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml`
`http://www.spec.org/cpu2006/flags/SGI-platform-2S.xml`

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