SPEC® CINT2006 Result

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SGI

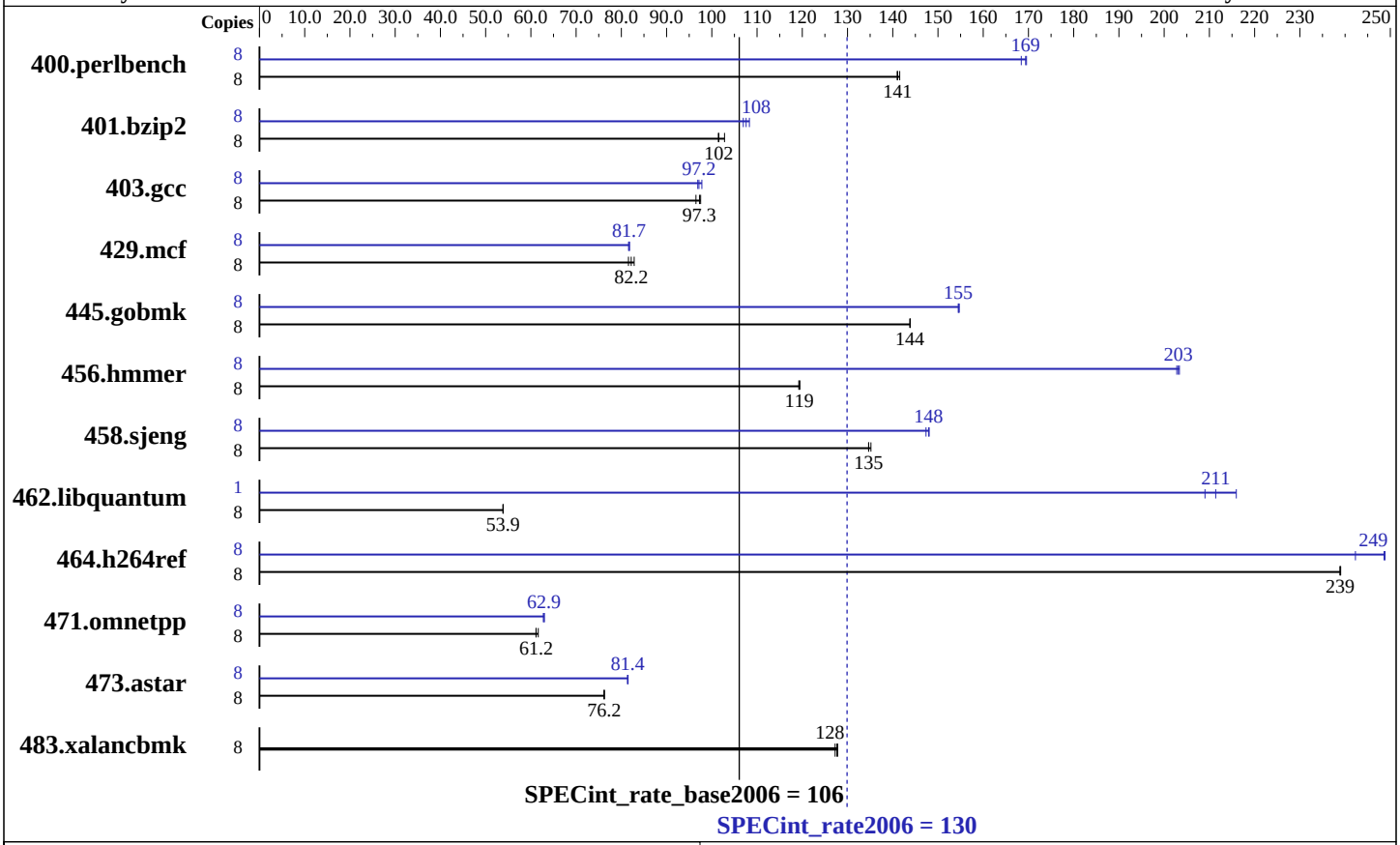
SGI Altix ICE 8200
(Intel Xeon E5440, 2.83 GHz)

SPECint®_rate2006 = 130

SPECint_rate_base2006 = 106

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

Test date: Jan-2007
Hardware Availability: Jan-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E5440
CPU Characteristics:	Quad Core, 2.83GHz
CPU MHz:	2833
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	16 GB (8*2GB PC2-5300 FB-DIMMs)
Disk Subsystem:	16 TB RAID 5+1 32 x 500 GB SATA (Seagate Barracuda 7200 rpm)
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1 Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ Compiler for Linux Version 10.1, Build 20070913
Auto Parallel:	Yes
File System:	NFSv3 IPoIB
System State:	Multi-user, run level 3
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap library V8.1 SGI ProPack 5 for Linux Service Pack 3 Binutils 2.17

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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	8	552	142	554	141	**554**	**141**	8	464	168	461	170	**461**	**169**
401.bzip2	8	**760**	**102**	761	101	751	103	8	722	107	**718**	**108**	713	108
403.gcc	8	667	96.5	**662**	**97.3**	660	97.5	8	665	96.9	658	97.8	**663**	**97.2**
429.mcf	8	881	82.8	894	81.6	**888**	**82.2**	8	892	81.8	894	81.6	**893**	**81.7**
445.gobmk	8	583	144	**583**	**144**	584	144	8	543	155	**543**	**155**	542	155
456.hmmer	8	625	119	**625**	**119**	626	119	8	368	203	367	203	**367**	**203**
458.sjeng	8	719	135	716	135	**719**	**135**	8	**654**	**148**	657	147	654	148
462.libquantum	8	**3078**	**53.9**	3077	53.9	3078	53.8	1	99.1	209	95.9	216	**98.0**	**211**
464.h264ref	8	**741**	**239**	741	239	741	239	8	**712**	**249**	711	249	731	242
471.omnetpp	8	**818**	**61.2**	811	61.6	818	61.1	8	794	63.0	**795**	**62.9**	797	62.7
473.astar	8	**737**	**76.2**	737	76.2	737	76.2	8	689	81.5	**690**	**81.4**	690	81.4
483.xalancbmk	8	432	128	434	127	**432**	**128**	8	432	128	434	127	**432**	**128**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

```
BIOS settings:
  Snoop Filter:             Disabled
  Hardware Prefetcher:      Enabled
  Adjacent Sector Prefetch: Disabled
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
The taskset utility was used to bind processes to cores
Parallel settings for 462.libquantum peak:
  OMP_NUM_THREADS = 8
  KMP_AFFINITY = physical,0
  KMP_STACKSIZE = 64M
```

Base Compiler Invocation

C benchmarks:

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

C++ benchmarks:

```
/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-fast -inline-calloc -opt-malloc-options=3

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs -lsmartheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

401.bzip2: /sw/sdev/intel-cc/x86_64/10.1.008/bin/icc
-L/sw/sdev/intel-cc/x86_64/10.1.008/lib
-I/sw/sdev/intel-cc/x86_64/10.1.008/include

456.hmmer: /sw/sdev/intel-cc/x86_64/10.1.008/bin/icc
-L/sw/sdev/intel-cc/x86_64/10.1.008/lib
-I/sw/sdev/intel-cc/x86_64/10.1.008/include

C++ benchmarks:
/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias -prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo -no-prec-div -ansi-alias

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

Continued on next page

Peak Other Flags (Continued)

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-ic10-ia32-intel64-linux-flags.20090714.04.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.04.xml`

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