



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

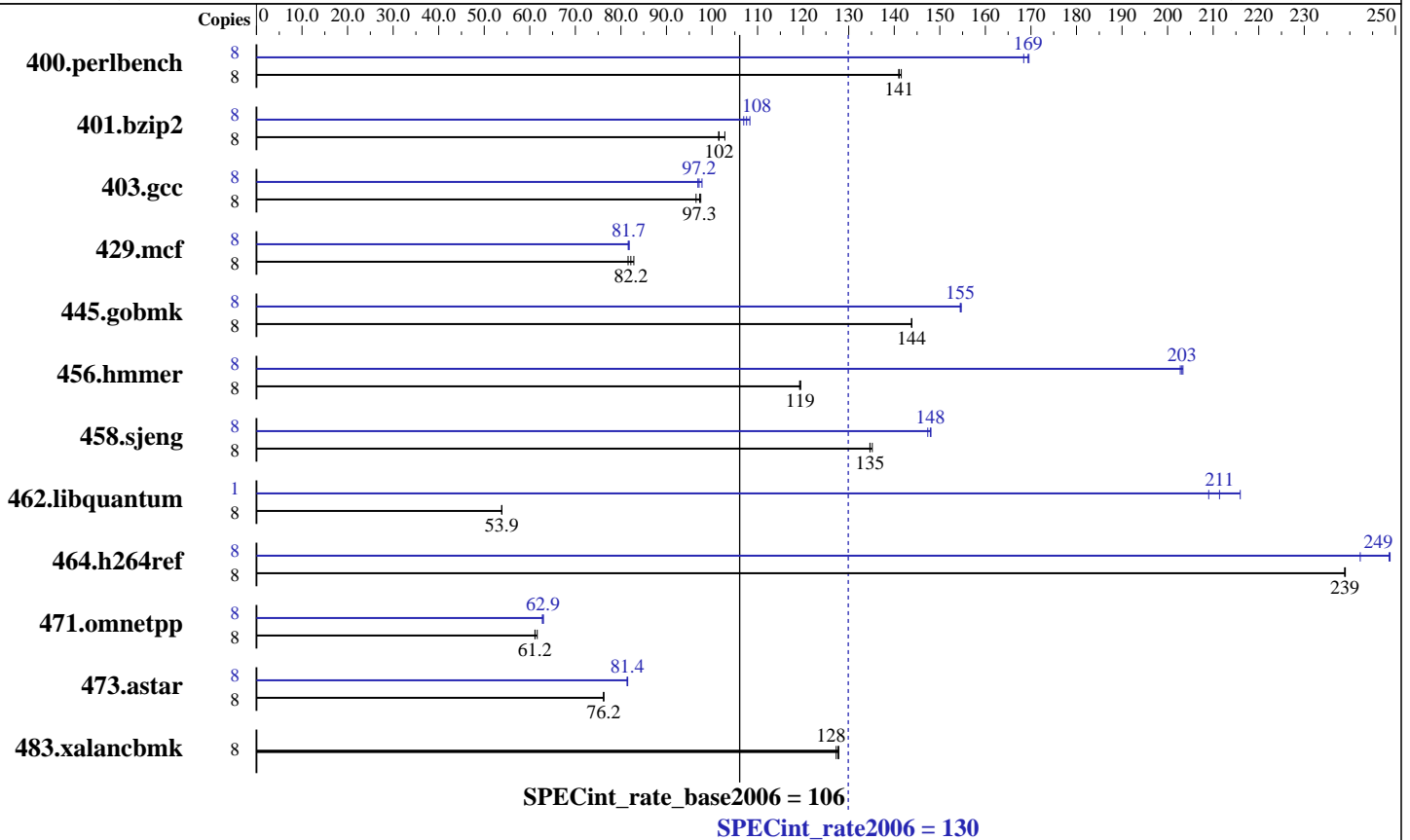
Test sponsor: SGI

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
```



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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.hmmmer: -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:

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

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