SPEC® CINT2006 Result

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Sun Microsystems

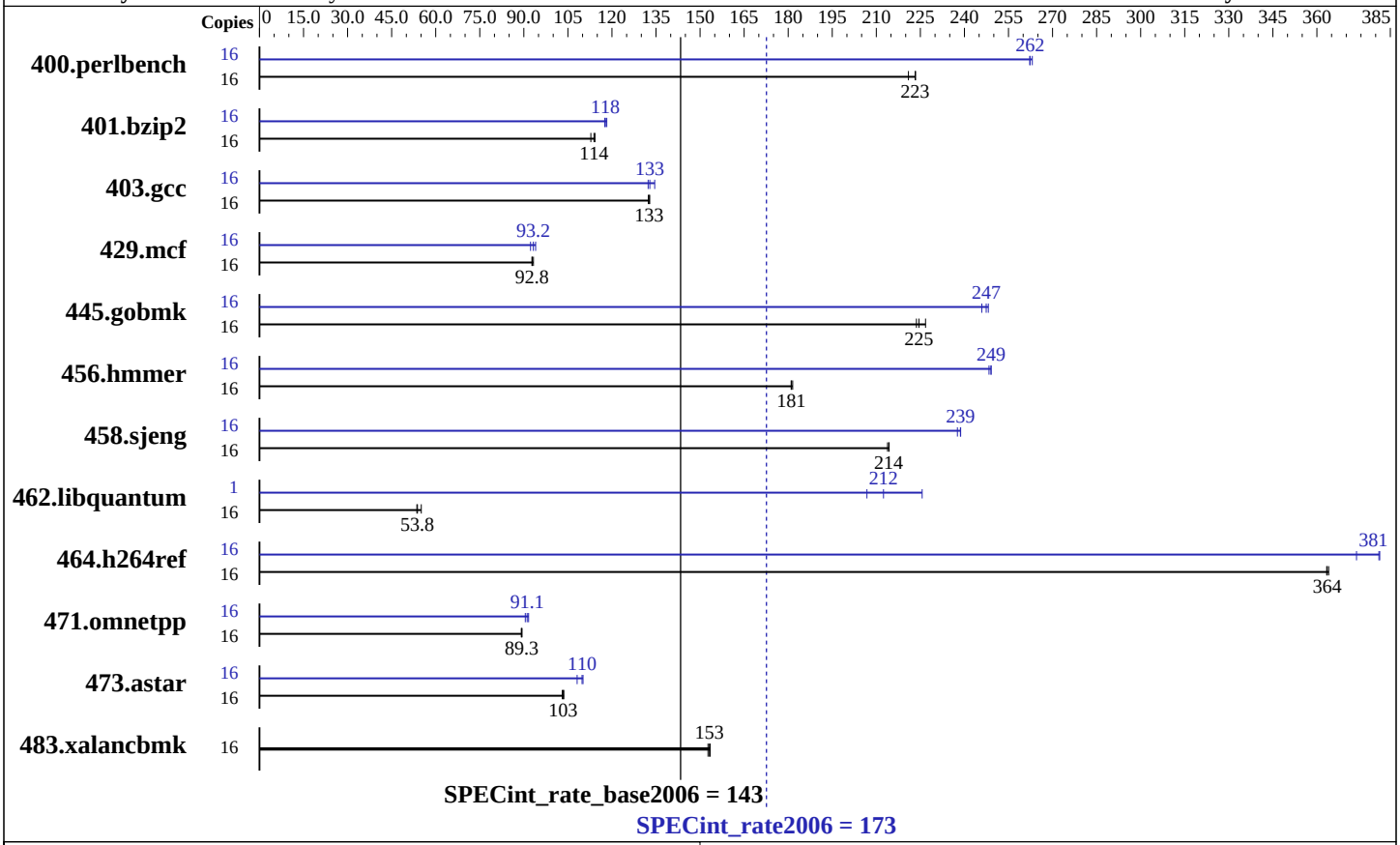
Sun Netra X4450 (Intel Xeon E7338 2.4GHz)

SPECint®_rate2006 = 173

SPECint_rate_base2006 = 143

CPU2006 license: 6
Test sponsor: Sun Microsystems
Tested by: Sun Microsystems

Test date: Aug-2008
Hardware Availability: Sep-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E7338
CPU Characteristics:	
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip, 3 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	128 GB (32x4 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem:	SAS, 146 GB, 10K 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 Linux32 and Linux64 version 10.1 Build 20070913
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Multi-user, run level 3
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Binutils 2.17.10.50 Microquill SmartHeap V8.1

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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	16	700	223	708	221	**700**	**223**	16	594	263	596	262	**596**	**262**
401.bzip2	16	1369	113	**1356**	**114**	1352	114	16	1306	118	1314	118	**1311**	**118**
403.gcc	16	973	132	**971**	**133**	969	133	16	**969**	**133**	957	135	973	132
429.mcf	16	1564	93.3	**1572**	**92.8**	1573	92.8	16	**1565**	**93.2**	1552	94.0	1581	92.3
445.gobmk	16	**748**	**225**	740	227	750	224	16	676	248	**678**	**247**	683	246
456.hmmer	16	822	182	825	181	**824**	**181**	16	599	249	601	248	**599**	**249**
458.sjeng	16	**904**	**214**	903	214	905	214	16	**811**	**239**	815	238	811	239
462.libquantum	16	6018	55.1	**6164**	**53.8**	6187	53.6	1	**97.5**	**212**	91.8	226	100	207
464.h264ref	16	975	363	973	364	**974**	**364**	16	928	381	948	373	**929**	**381**
471.omnetpp	16	**1120**	**89.3**	1122	89.1	1119	89.4	16	**1097**	**91.1**	1091	91.6	1105	90.5
473.astar	16	**1086**	**103**	1090	103	1084	104	16	**1023**	**110**	1020	110	1039	108
483.xalancbmk	16	719	153	723	153	**721**	**153**	16	719	153	723	153	**721**	**153**

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

Operating System Notes

```
taskset was used to bind processes to cores except for 462.libquantum peak

'ulimit -s unlimited' was used to set the stacksize to unlimited
OMP_NUM_THREADS set to number of cores.
KMP_STACKSIZE set to 64M
KMP_AFFINITY set to physical,0
```

Platform Notes

```
Default BIOS configuration used (includes this settings):
Hardware Prefetch = Disable; Adjacent Sector Prefetch = Disable
```

General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
and 462.libquantum for peak, are compiled in 64-bit mode
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

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
-L/data2/SmartHeap_8.1/lib -lsmartheap

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

462.libquantum: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
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 -auto-ilp32
-unroll4 -ansi-alias -opt-multi-version-aggressive
-vec-guard-write

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 -O3 -auto-ilp32 -unroll8 -Ob0
-opt-streaming-stores always -vec-guard-write
-opt-malloc-options=3 -parallel -par-runtime-control
-no-prec-div -opt-ra-region-strategy=routine

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 -L/data2/SmartHeap_8.1/lib -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 -L/data2/SmartHeap_8.1/lib -lsmartheap

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

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.20090713.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.20090713.xml`

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