SPEC® CINT2006 Result

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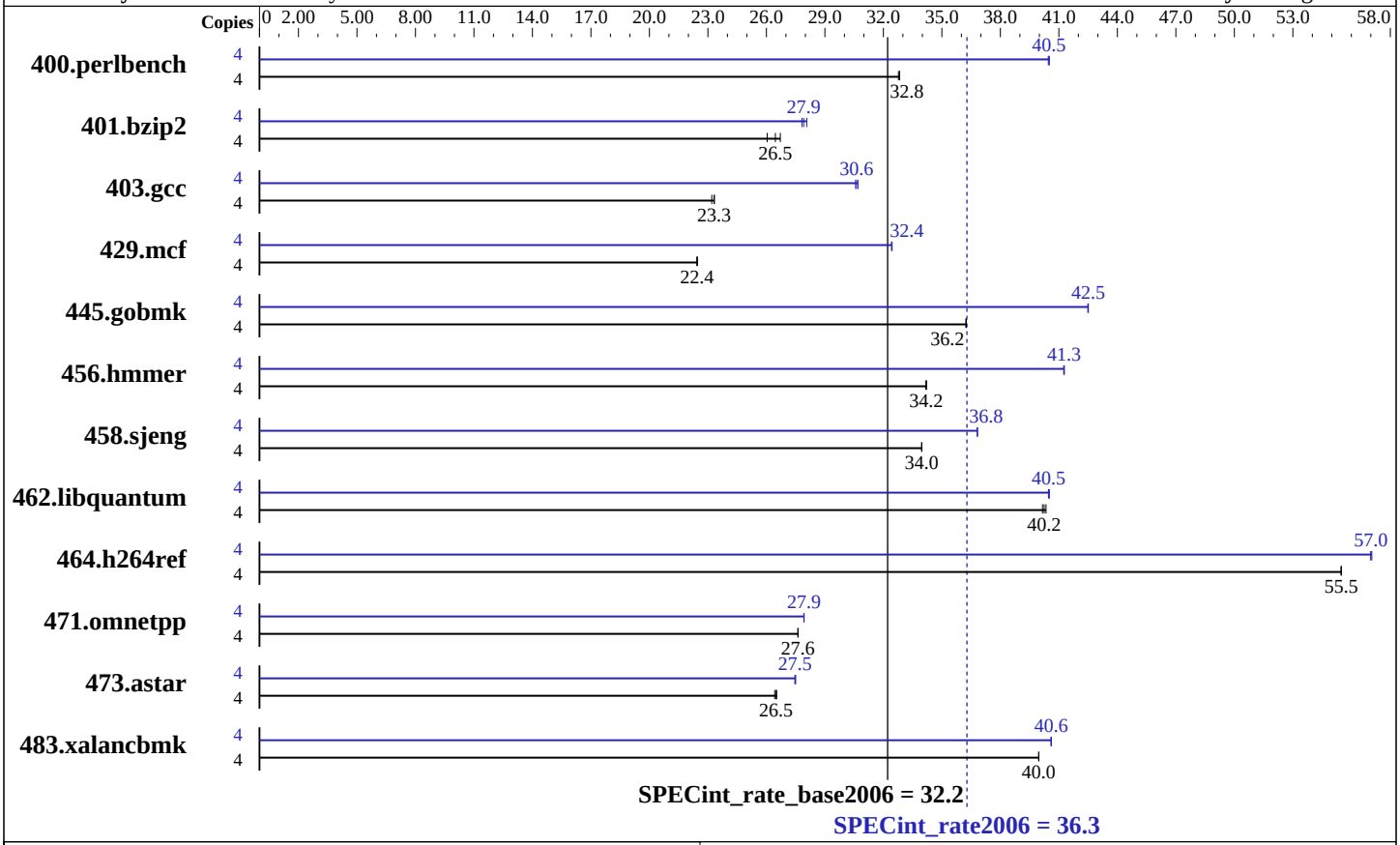
Sun Microsystems
Sun Fire X2200 M2

SPECint®_rate2006 = 36.3

SPECint_rate_base2006 = 32.2

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

Test date: Apr-2007
Hardware Availability: Feb-2007
Software Availability: Aug-2006



Hardware

CPU Name:	AMD Opteron 2210
CPU Characteristics:	
CPU MHz:	1800
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	None
Other Cache:	None
Memory:	16 GB (8x2GB, DDR2-667 CL5 ECC Reg Dual Rank)
Disk Subsystem:	SATA, 250 GB,7200 RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux AS release 4 Update 5
Compiler:	QLogic PathScale Compiler Suite, Release 2.5
Auto Parallel:	No
File System:	ext3
System State:	Multi-user, run level 3
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill's SmartHeap 8.0 32-bit Library for Linux

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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	4	1190	32.8	**1191**	**32.8**	1192	32.8	4	965	40.5	**965**	**40.5**	966	40.5
401.bzip2	4	1482	26.0	**1459**	**26.5**	1445	26.7	4	1375	28.1	**1383**	**27.9**	1387	27.8
403.gcc	4	1380	23.3	**1381**	**23.3**	1388	23.2	4	1053	30.6	**1052**	**30.6**	1049	30.7
429.mcf	4	1624	22.5	**1625**	**22.4**	1626	22.4	4	1125	32.4	1124	32.4	**1125**	**32.4**
445.gobmk	4	**1158**	**36.2**	1158	36.2	1157	36.3	4	988	42.5	**987**	**42.5**	987	42.5
456.hmmer	4	1091	34.2	**1091**	**34.2**	1092	34.2	4	904	41.3	**904**	**41.3**	905	41.2
458.sjeng	4	1425	34.0	1425	34.0	**1425**	**34.0**	4	1315	36.8	**1315**	**36.8**	1314	36.8
462.libquantum	4	2054	40.3	**2059**	**40.2**	2064	40.2	4	2048	40.5	2046	40.5	**2048**	**40.5**
464.h264ref	4	**1595**	**55.5**	1596	55.5	1595	55.5	4	1552	57.1	1553	57.0	**1553**	**57.0**
471.omnetpp	4	905	27.6	**905**	**27.6**	905	27.6	4	**895**	**27.9**	895	27.9	895	27.9
473.astar	4	1063	26.4	**1060**	**26.5**	1059	26.5	4	**1022**	**27.5**	1021	27.5	1022	27.5
483.xalancbmk	4	**691**	**40.0**	691	40.0	690	40.0	4	**680**	**40.6**	680	40.6	679	40.6

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

General Notes

```
taskset utility used to bind CPU(s) to processes
Default BIOS settings were used.
```

Base Compiler Invocation

C benchmarks:
`pathcc`

C++ benchmarks:
`pathCC`

Base Portability Flags

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
429.mcf: `-DSPEC_CPU_LP64`
445.gobmk: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
464.h264ref: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Base Optimization Flags

C benchmarks:
`-Ofast`

C++ benchmarks:
`-Ofast -m32 -L/data1/SmartHeap_8smp/lib -lsmartheap_smp`

Base Other Flags

C benchmarks:
`-IPA:max_jobs=4`

C++ benchmarks:
`-IPA:max_jobs=4`

Peak Compiler Invocation

C benchmarks:
`pathcc`

C++ benchmarks:
`pathCC`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
401.bzip2: `-DSPEC_CPU_LP64`
445.gobmk: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
464.h264ref: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-Ofast`

401.bzip2: `-O3 -LNO:ou_prod_max=10 -OPT:Ofast -OPT:alias=disjoint`

Continued on next page

Peak Optimization Flags (Continued)

403.gcc: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-m32 -O3 -OPT:Ofast`

429.mcf: `-m32 -O2 -ipa -L/data1/SmartHeap_8smp/lib -lsmartheap_smp`

445.gobmk: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off -WOPT:retype_expr=on`

456.hmmer: `-O2 -OPT:alias=disjoint -WOPT:aggstr=0 -CG:cflow=0`

458.sjeng: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -IPA:plimit=50000 -IPA:pu_reorder=2`

462.libquantum: `-O3 -ipa -CG:local_fwd_sched=on -IPA:space=1000`

464.h264ref: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -IPA:plimit=20000 -OPT:alias=disjoint -LNO:prefetch=0`

C++ benchmarks:

471.omnetpp: `-Ofast -IPA:pu_reorder=2 -CG:gcm=off -m32 -L/data1/SmartHeap_8smp/lib -lsmartheap_smp`

473.astar: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-Ofast -m32 -L/data1/SmartHeap_8smp/lib -lsmartheap_smp`

483.xalancbmk: `-Ofast -m32 -OPT:unroll_times_max=8 -L/data1/SmartHeap_8smp/lib -lsmartheap_smp`

Peak Other Flags

C benchmarks:
`-IPA:max_jobs=4`

C++ benchmarks:
`-IPA:max_jobs=4`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.27.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.27.xml`

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