SPEC® CINT2006 Result

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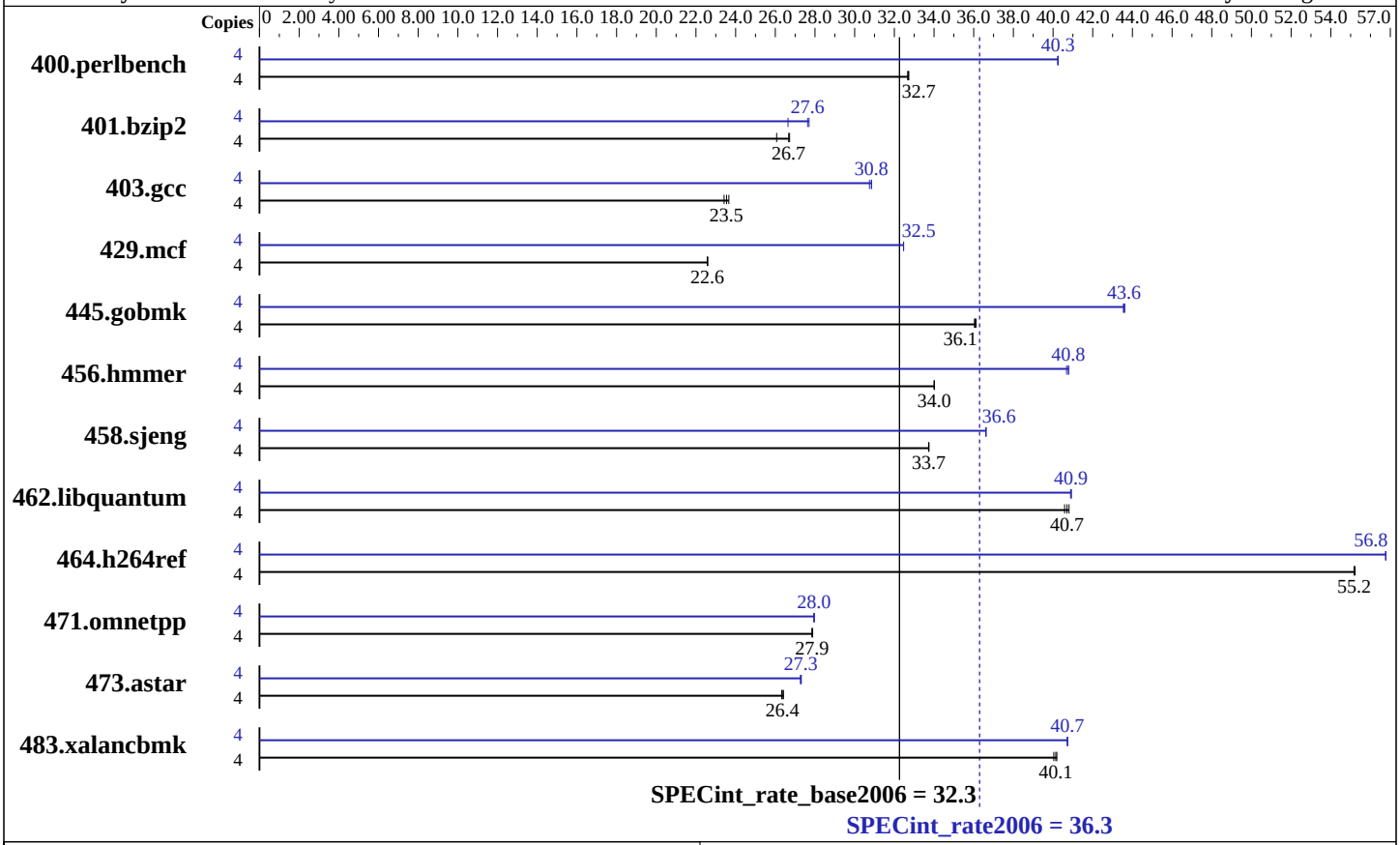
Sun Microsystems
Sun Fire X4100 M2

SPECint®_rate2006 = 36.3

SPECint_rate_base2006 = 32.3

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

Test date: Apr-2007
Hardware Availability: Oct-2006
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:	SAS, 72 GB,10K RPM
Other Hardware:	None

Software

Operating System:	RedHat 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	1194	32.7	**1195**	**32.7**	1196	32.7	4	971	40.2	971	40.3	**971**	**40.3**
401.bzip2	4	1445	26.7	**1447**	**26.7**	1481	26.1	4	1393	27.7	1449	26.6	**1397**	**27.6**
403.gcc	4	**1368**	**23.5**	1361	23.7	1375	23.4	4	1047	30.7	1044	30.9	**1044**	**30.8**
429.mcf	4	1614	22.6	**1616**	**22.6**	1616	22.6	4	1124	32.5	1124	32.5	**1124**	**32.5**
445.gobmk	4	1162	36.1	1164	36.0	**1164**	**36.1**	4	964	43.5	**963**	**43.6**	962	43.6
456.hmmer	4	**1097**	**34.0**	1097	34.0	1098	34.0	4	915	40.8	**915**	**40.8**	917	40.7
458.sjeng	4	**1435**	**33.7**	1434	33.7	1435	33.7	4	1322	36.6	**1322**	**36.6**	1322	36.6
462.libquantum	4	2042	40.6	**2036**	**40.7**	2031	40.8	4	2027	40.9	2025	40.9	**2026**	**40.9**
464.h264ref	4	1603	55.2	1604	55.2	**1604**	**55.2**	4	1559	56.8	1560	56.8	**1559**	**56.8**
471.omnetpp	4	897	27.9	**898**	**27.9**	898	27.9	4	**894**	**28.0**	894	28.0	895	27.9
473.astar	4	1067	26.3	**1065**	**26.4**	1063	26.4	4	1030	27.3	**1029**	**27.3**	1028	27.3
483.xalancbmk	4	687	40.2	**688**	**40.1**	689	40.0	4	678	40.7	678	40.7	**678**	**40.7**

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.

This result was measured on the Sun Fire X4100 M2. In addition,
Sun has submitted the same result for the Sun Fire X4200 M2, which is
electronically equivalent to the Sun Fire X4100 M2.
```

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`

Continued on next page

Base Portability Flags (Continued)

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`

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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 12:14:16 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 May 2007.