SPEC® CINT2006 Result

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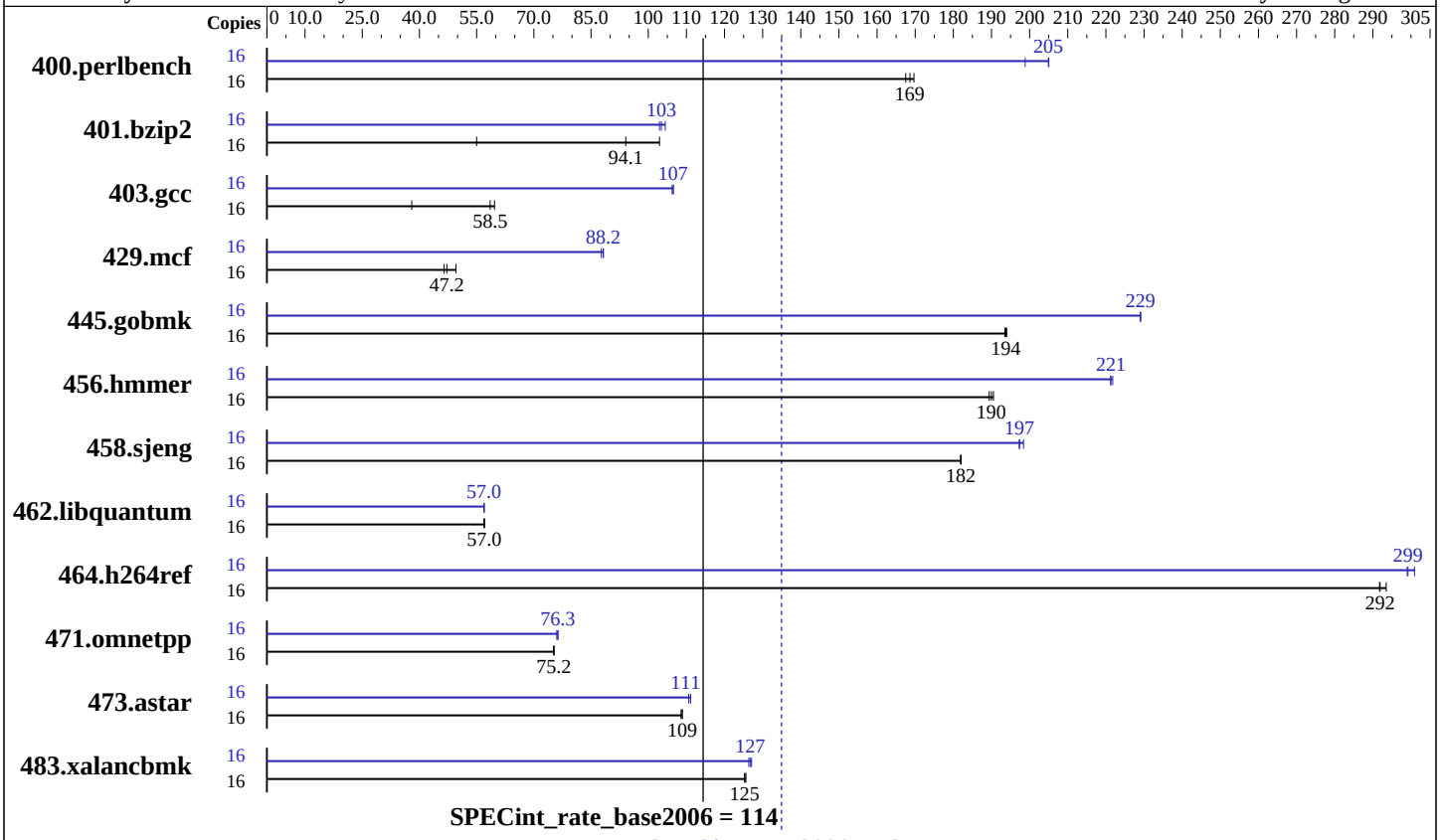
Sun Microsystems
Sun Fire X4600 M2

SPECint®_rate2006 = 135

SPECint_rate_base2006 = 114

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

Test date: Mar-2007
Hardware Availability: Oct-2006
Software Availability: Aug-2006



Hardware

CPU Name:	AMD Opteron 8218
CPU Characteristics:	
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	16 cores, 8 chips, 2 cores/chip
CPU(s) orderable:	4,8 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:	32 GB (16x2GB, DDR2-667 CL5 ECC Reg Dual Rank)
Disk Subsystem:	SAS, 72 GB,10K RPM
Other Hardware:	None

Software

Operating System:	RedHat Enterprise Linux Advanced Server Release 4 update 4 for AMD64/EMT64
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	16	921	170	933	168	**927**	**169**	16	786	199	**763**	**205**	762	205
401.bzip2	16	2808	55.0	**1641**	**94.1**	1500	103	16	1500	103	1478	104	**1493**	**103**
403.gcc	16	3391	38.0	**2200**	**58.5**	2158	59.7	16	1209	107	1212	106	**1209**	**107**
429.mcf	16	3141	46.5	**3092**	**47.2**	2943	49.6	16	**1655**	**88.2**	1664	87.7	1653	88.3
445.gobmk	16	867	194	865	194	**866**	**194**	16	732	229	733	229	**733**	**229**
456.hmmer	16	788	189	784	191	**786**	**190**	16	673	222	**675**	**221**	675	221
458.sjeng	16	1063	182	1064	182	**1064**	**182**	16	**981**	**197**	976	198	981	197
462.libquantum	16	5811	57.0	5818	57.0	**5817**	**57.0**	16	5817	57.0	**5821**	**57.0**	5826	56.9
464.h264ref	16	1206	294	1214	292	**1213**	**292**	16	1177	301	**1183**	**299**	1184	299
471.omnetpp	16	1328	75.3	1329	75.2	**1329**	**75.2**	16	**1311**	**76.3**	1310	76.3	1316	76.0
473.astar	16	**1031**	**109**	1031	109	1034	109	16	1016	111	1011	111	**1011**	**111**
483.xalancbmk	16	**881**	**125**	879	126	881	125	16	874	126	**871**	**127**	869	127

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
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

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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