SPEC® CINT2006 Result

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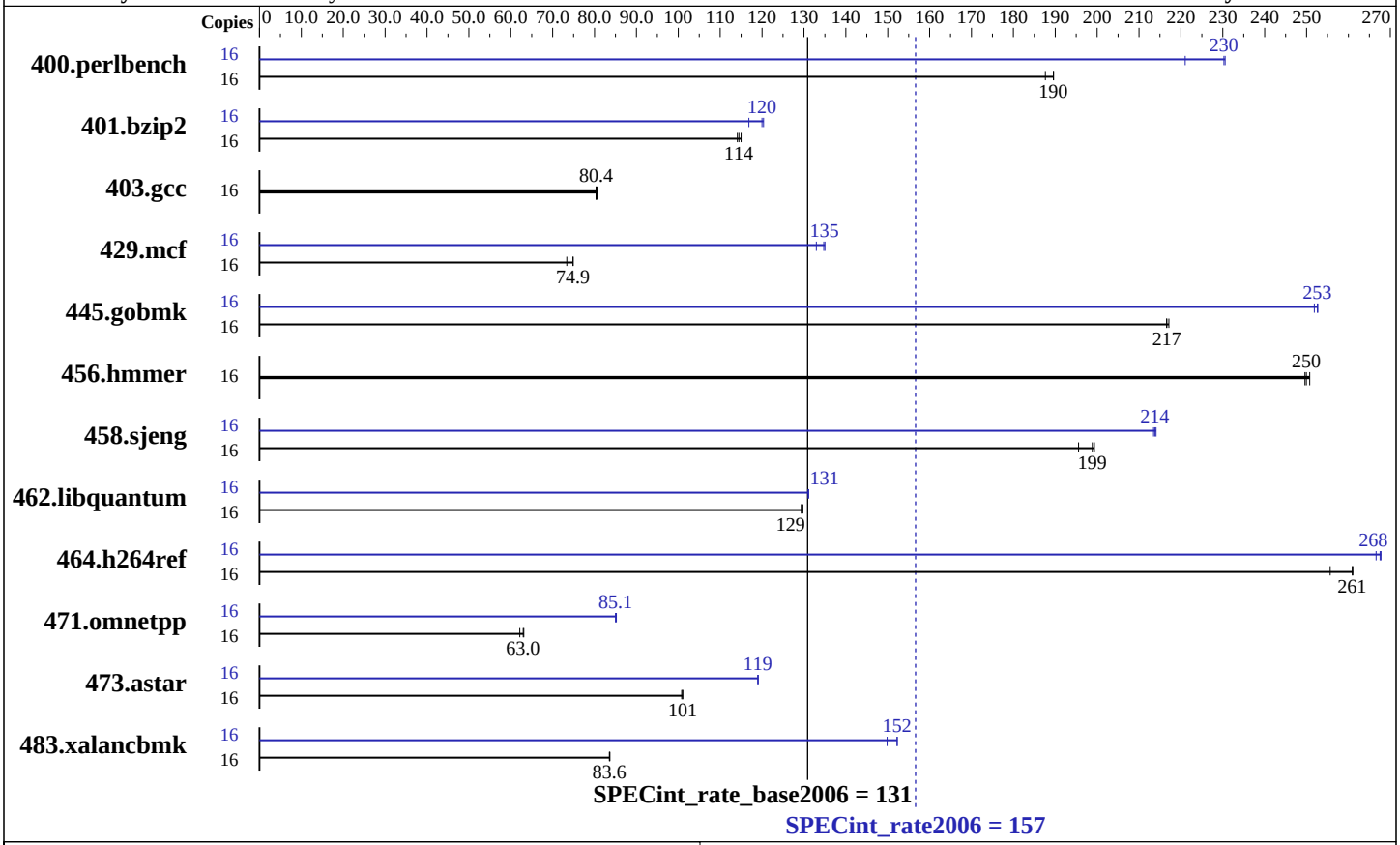
Sun Microsystems
Sun Fire X4600 M2

SPECint®_rate2006 = 157

SPECint_rate_base2006 = 131

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

Test date: May-2007
Hardware Availability: Jun-2007
Software Availability: Jul-2007



Hardware

CPU Name:	AMD Opteron 8220
CPU Characteristics:	
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	16 cores, 8 chips, 2 cores/chip
CPU(s) orderable:	4-8 (order by number of 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:	96 GB (16x4GB+16x2GB, DDR2-667 CL5 ECC Registered SDRAM)
Disk Subsystem:	SAS, 72 GB, 10K RPM
Other Hardware:	None

Software

Operating System:	Solaris 10 6/06
Compiler:	Sun Studio 12
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap Library v7.4

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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	833	188	824	190	**825**	**190**	16	707	221	678	231	**679**	**230**
401.bzip2	16	1353	114	**1349**	**114**	1343	115	16	1321	117	1283	120	**1287**	**120**
403.gcc	16	1598	80.6	**1602**	**80.4**	1603	80.4	16	1598	80.6	**1602**	**80.4**	1603	80.4
429.mcf	16	1989	73.4	1948	74.9	**1949**	**74.9**	16	**1083**	**135**	1081	135	1097	133
445.gobmk	16	775	217	**775**	**217**	773	217	16	**664**	**253**	666	252	664	253
456.hmmer	16	595	251	**597**	**250**	598	250	16	595	251	**597**	**250**	598	250
458.sjeng	16	990	196	971	199	**974**	**199**	16	904	214	907	213	**905**	**214**
462.libquantum	16	2555	130	**2561**	**129**	2562	129	16	**2529**	**131**	2529	131	2530	131
464.h264ref	16	1385	256	**1357**	**261**	1356	261	16	1322	268	1328	267	**1323**	**268**
471.omnetpp	16	1609	62.2	**1588**	**63.0**	1584	63.1	16	1173	85.2	1176	85.0	**1176**	**85.1**
473.astar	16	1112	101	**1112**	**101**	1114	101	16	943	119	944	119	**944**	**119**
483.xalancbmk	16	1321	83.6	**1321**	**83.6**	1319	83.7	16	737	150	725	152	**725**	**152**

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

Operating System Notes

```
Processes were bound to cores using "submit" and "pbind".

ulimit -s unlimited  (shell): increases stack
```

Platform Notes

```
Default BIOS settings were used.
```

Base Compiler Invocation

C benchmarks:
```
cc
```

C++ benchmarks:
```
CC
```

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
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_SOLARIS
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS

Base Optimization Flags

C benchmarks:
-fast -xipo=2 -xarch=sse2a -m64

C++ benchmarks:
-fast -xipo=2 -xarch=sse2a -m64 -library=stlport4

Base Other Flags

C benchmarks:
-V

C++ benchmarks:
-verbose=version

Peak Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_X64
403.gcc: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS

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Peak Portability Flags (Continued)

456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_SOLARIS
483.xalancbmk: -DSPEC_CPU_SOLARIS

Peak Optimization Flags

C benchmarks:

400.perlbench: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xalias_level=std -xvector=simd -lbsdmalloc
-L/data1/SmartHeap_7.4smp/lib -lsmartheap_smp

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -xarch=sse2
-m64 -xalias_level=strong

403.gcc: basepeak = yes

429.mcf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xarch=sse2a -xalias_level=strict -lbsdmalloc

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xarch=sse2a -m64
-xrestrict -xalias_level=strong -xdepend -xpagesize=2m
-lmvec

456.hmmer: basepeak = yes

458.sjeng: -fast -xarch=sse2a -m64 -xipo=2 -xprefetch=auto
-xprefetch_level=3 -xpagesize=2m -lmvec

462.libquantum: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xarch=sse2a -m64 -xunroll=8

464.h264ref: -fast -xarch=sse2a -m64 -xipo=2 -xvector -xunroll=8
-xalias_level=strong -xrestrict -xpagesize=2m -lmvec

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xprefetch_level=3 -xarch=sse2a -Qoption ube -fsimple=3
-L/data1/SmartHeap_7.4smp/lib -lsmartheap_smp
-library=stlport4

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Peak Optimization Flags (Continued)

473.astar: `-fast -xipo=2 -L/data1/SmartHeap_7.4smp/lib -lsmartheap_smp -library=stlport4`

483.xalancbmk: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xipo=2 -xarch=sse2a -xpagesize_stack=2m -L/data1/SmartHeap_7.4smp/lib -lsmartheap_smp -library=stlport4`

Peak Other Flags

C benchmarks:
`-V`

C++ benchmarks:
`-verbose=version`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio-Opteron.20090715.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio-Opteron.20090715.xml

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