SPEC® CINT2006 Result

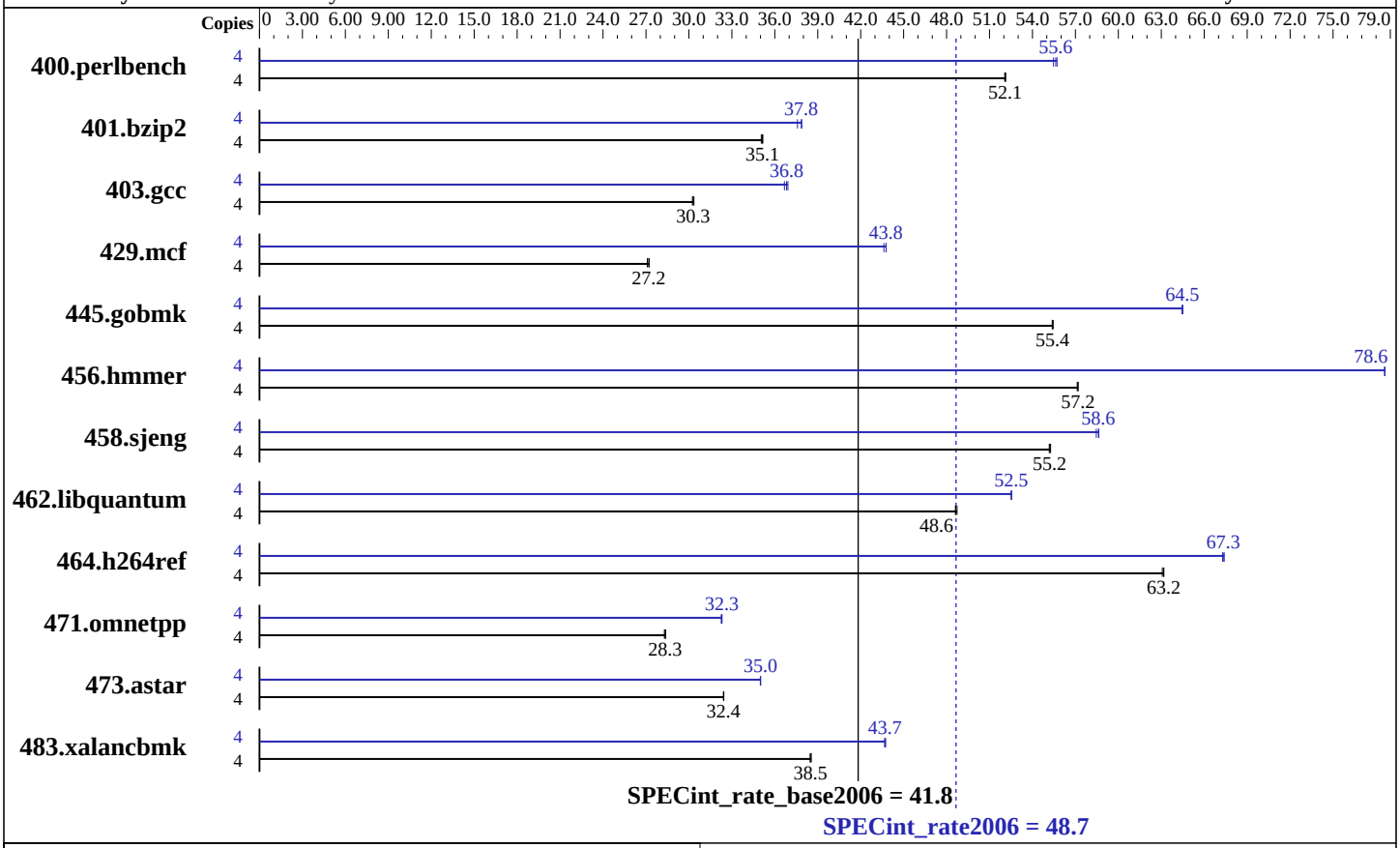
Sun Microsystems
Sun Fire X4200 M2

SPECint®_rate2006 = 48.7

SPECint_rate_base2006 = 41.8

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

Test date: Nov-2006
Hardware Availability: Oct-2006
Software Availability: Jul-2006



Hardware

CPU Name:	AMD Opteron 2220 SE
CPU Characteristics:	
CPU MHz:	2800
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:	Solaris 10 6/06
Compiler:	Sun Studio 11 with Patches
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

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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	750	52.1	751	52.1	**750**	**52.1**	4	701	55.7	705	55.5	**703**	**55.6**
401.bzip2	4	1098	35.2	1101	35.1	**1099**	**35.1**	4	1027	37.6	**1020**	**37.8**	1019	37.9
403.gcc	4	**1063**	**30.3**	1061	30.3	1065	30.2	4	878	36.7	**875**	**36.8**	872	36.9
429.mcf	4	1340	27.2	**1342**	**27.2**	1346	27.1	4	836	43.6	**833**	**43.8**	833	43.8
445.gobmk	4	757	55.4	758	55.4	**757**	**55.4**	4	651	64.4	651	64.5	**651**	**64.5**
456.hmmer	4	653	57.1	653	57.2	**653**	**57.2**	4	**475**	**78.6**	475	78.6	475	78.6
458.sjeng	4	**877**	**55.2**	876	55.3	877	55.2	4	828	58.5	**826**	**58.6**	825	58.6
462.libquantum	4	**1704**	**48.6**	1701	48.7	1705	48.6	4	1578	52.5	**1578**	**52.5**	1578	52.5
464.h264ref	4	1401	63.2	**1401**	**63.2**	1404	63.1	4	1316	67.3	**1315**	**67.3**	1313	67.4
471.omnetpp	4	881	28.4	**882**	**28.3**	884	28.3	4	775	32.3	**774**	**32.3**	774	32.3
473.astar	4	866	32.4	**866**	**32.4**	866	32.4	4	**802**	**35.0**	803	35.0	802	35.0
483.xalancbmk	4	716	38.5	**717**	**38.5**	717	38.5	4	631	43.7	**632**	**43.7**	632	43.7

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 131072  (shell): increases stack

The following patches were applied to Sun Studio 11 compiler:
120759-07 : x86/x64
121016-03 : x86 C
121020-03 : x86 F90
121018-03 : x86 C++
```

Platform Notes

```
Default BIOS settings was used.

This result was measured on the Sun Fire X4100 M2
Sun Fire X4100 M2 and Sun Fire X4200 M2 are electronically equivalent.
```

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=amd64a

C++ benchmarks:
-fast -xipo=2 -xarch=amd64a -library=stlport4

Base Other Flags

C benchmarks:
-V

C++ benchmarks:
-verbose=version

Peak Compiler Invocation

C benchmarks:
cc

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Peak Compiler Invocation (Continued)

C++ benchmarks:
CC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS_X64
403.gcc: -DSPEC_CPU_SOLARIS
462.libquantum: -DSPEC_CPU_SOLARIS
483.xalancbmk: -DSPEC_CPU_SOLARIS

Peak Optimization Flags

C benchmarks:

400.perlbench: -fast -xarch=amd64a -xvector=simd -lbsdmalloc
-Wu,-fsimple=3

401.bzip2: ONESTEP -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=2m
-xipo=2 -xalias_level=strong -xarch=sse2a
-M /usr/lib/ld/map.bssalign -Wu,-fsimple=3

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xbuiltin=%none -xpagesize=2m -lmvec

429.mcf: -fast -xpagesize=2m -xalias_level=std
-M /usr/lib/ld/map.bssalign -lmvec

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xarch=amd64a
-xrestrict -xalias_level=strong -xdepend -xpagesize=2m
-lmvec

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xarch=amd64a
-Wd,-iropt-prof

458.sjeng: -fast -xarch=amd64a -xipo=2 -xprefetch=auto
-xprefetch_level=3 -xpagesize=2m -lmvec

462.libquantum: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xarch=amd64a
-xipo=2 -xunroll=8

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Peak Optimization Flags (Continued)

464.h264ref: `-fast -xarch=amd64a -xipo=2 -xvector -xunroll=8 -xalias_level=strong -xrestrict -xpagesize=2m -lmvec`

C++ benchmarks:

471.omnetpp: `-fast -xipo=2 -xprefetch_level=3 -xpagesize=2m -xarch=sse2a -Qoption ube -fsimple=3 -library=stlport4`

473.astar: `-fast -xrestrict -xarch=amd64a -xipo=2 -xprefetch_level=3 -xpagesize=2m -library=stlport4`

483.xalancbmk: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xipo=2 -xarch=sse2a -xpagesize=2m -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.20090715.01.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio-Opteron.20090715.01.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
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