SPEC® CINT2006 Result

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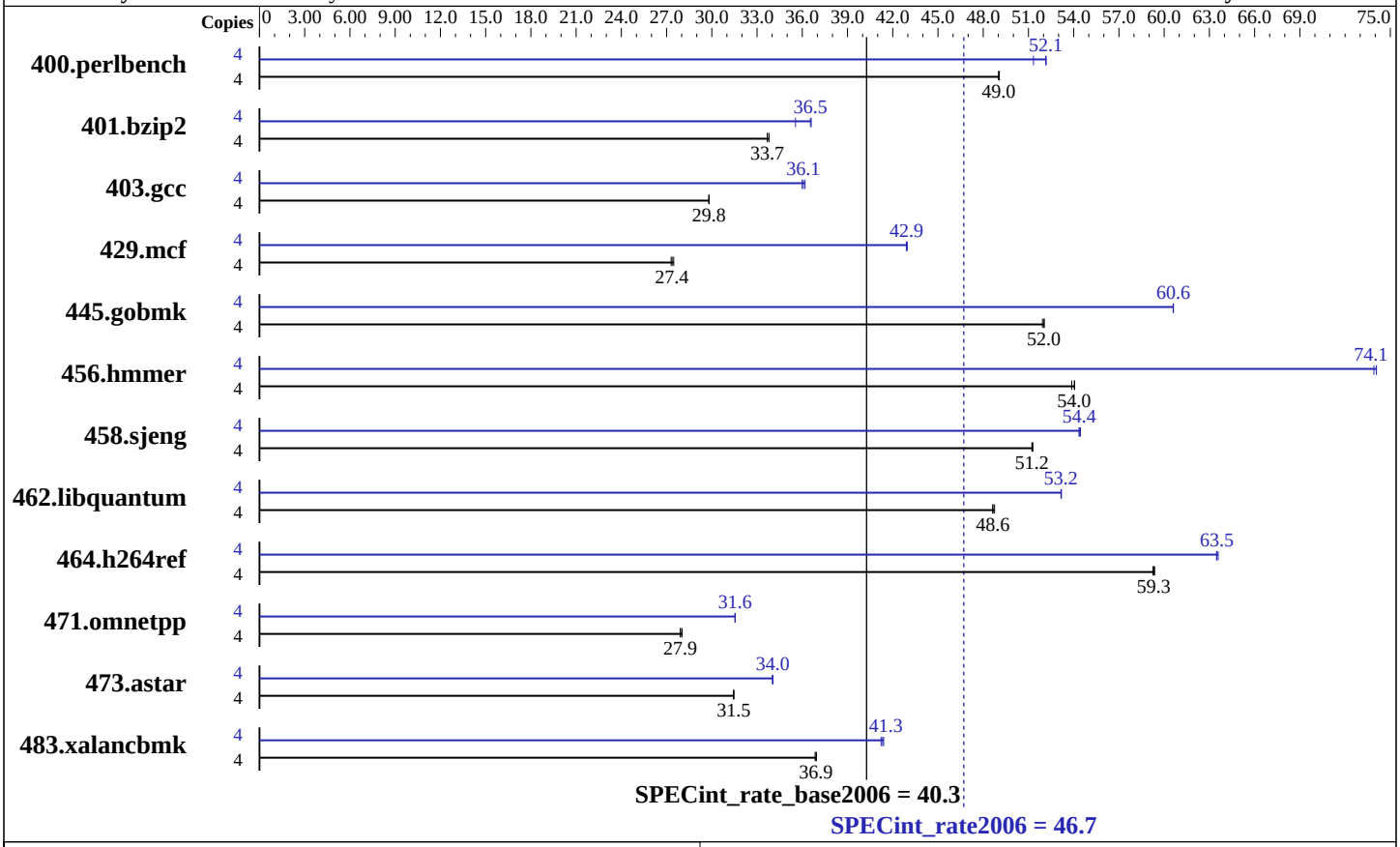
Sun Microsystems
Sun Fire X2200 M2

SPECint®_rate2006 = 46.7

SPECint_rate_base2006 = 40.3

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

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



Hardware

CPU Name:	AMD Opteron 2218
CPU Characteristics:	
CPU MHz:	2600
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:	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	796	49.1	**797**	**49.0**	797	49.0	4	749	52.2	761	51.3	**749**	**52.1**
401.bzip2	4	1142	33.8	**1146**	**33.7**	1146	33.7	4	1086	35.5	**1056**	**36.5**	1055	36.6
403.gcc	4	1080	29.8	**1080**	**29.8**	1080	29.8	4	**892**	**36.1**	895	36.0	890	36.2
429.mcf	4	**1333**	**27.4**	1336	27.3	1328	27.5	4	849	43.0	850	42.9	**850**	**42.9**
445.gobmk	4	**806**	**52.0**	806	52.0	808	51.9	4	692	60.6	**692**	**60.6**	692	60.6
456.hmmer	4	693	53.9	690	54.1	**691**	**54.0**	4	505	73.9	504	74.1	**504**	**74.1**
458.sjeng	4	944	51.3	945	51.2	**945**	**51.2**	4	889	54.4	**890**	**54.4**	890	54.4
462.libquantum	4	1704	48.6	**1704**	**48.6**	1700	48.8	4	1558	53.2	**1559**	**53.2**	1559	53.2
464.h264ref	4	1491	59.4	1494	59.3	**1493**	**59.3**	4	**1394**	**63.5**	1392	63.6	1395	63.5
471.omnetpp	4	895	27.9	**895**	**27.9**	892	28.0	4	792	31.6	**792**	**31.6**	793	31.5
473.astar	4	892	31.5	**893**	**31.5**	893	31.4	4	826	34.0	824	34.1	**825**	**34.0**
483.xalancbmk	4	749	36.9	**748**	**36.9**	747	36.9	4	669	41.2	**668**	**41.3**	667	41.4

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.
```

Base Compiler Invocation

C benchmarks:
cc

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Base Compiler Invocation (Continued)

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

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

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

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Peak Optimization Flags (Continued)

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`

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For other inquiries, please contact webmaster@spec.org.

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