SPEC® CINT2006 Result

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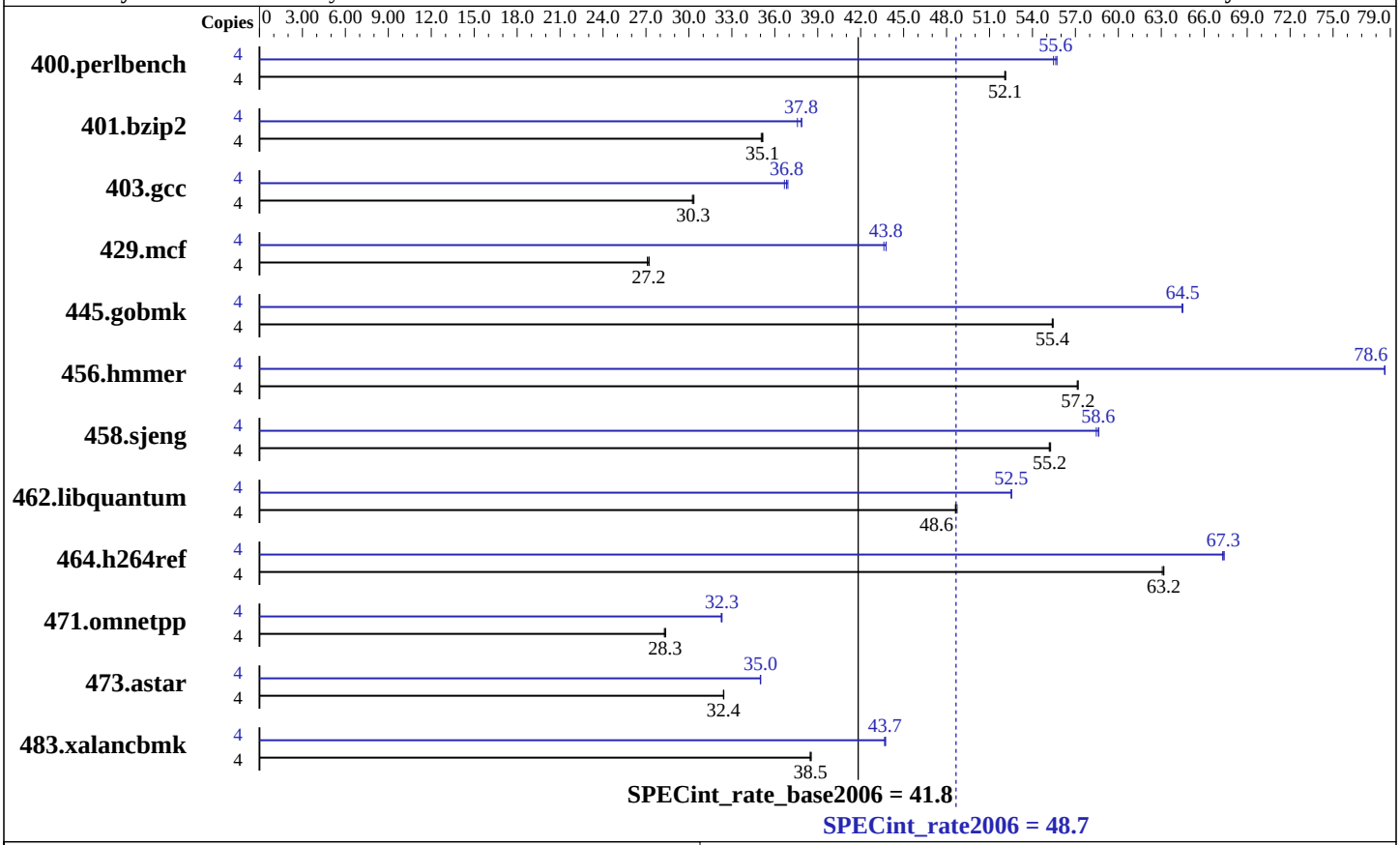
Sun Microsystems
Sun Fire X4100 M2

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. 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:
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

Continued on next page

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`

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 10:08:50 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 29 November 2006.