SPEC® CINT2006 Result

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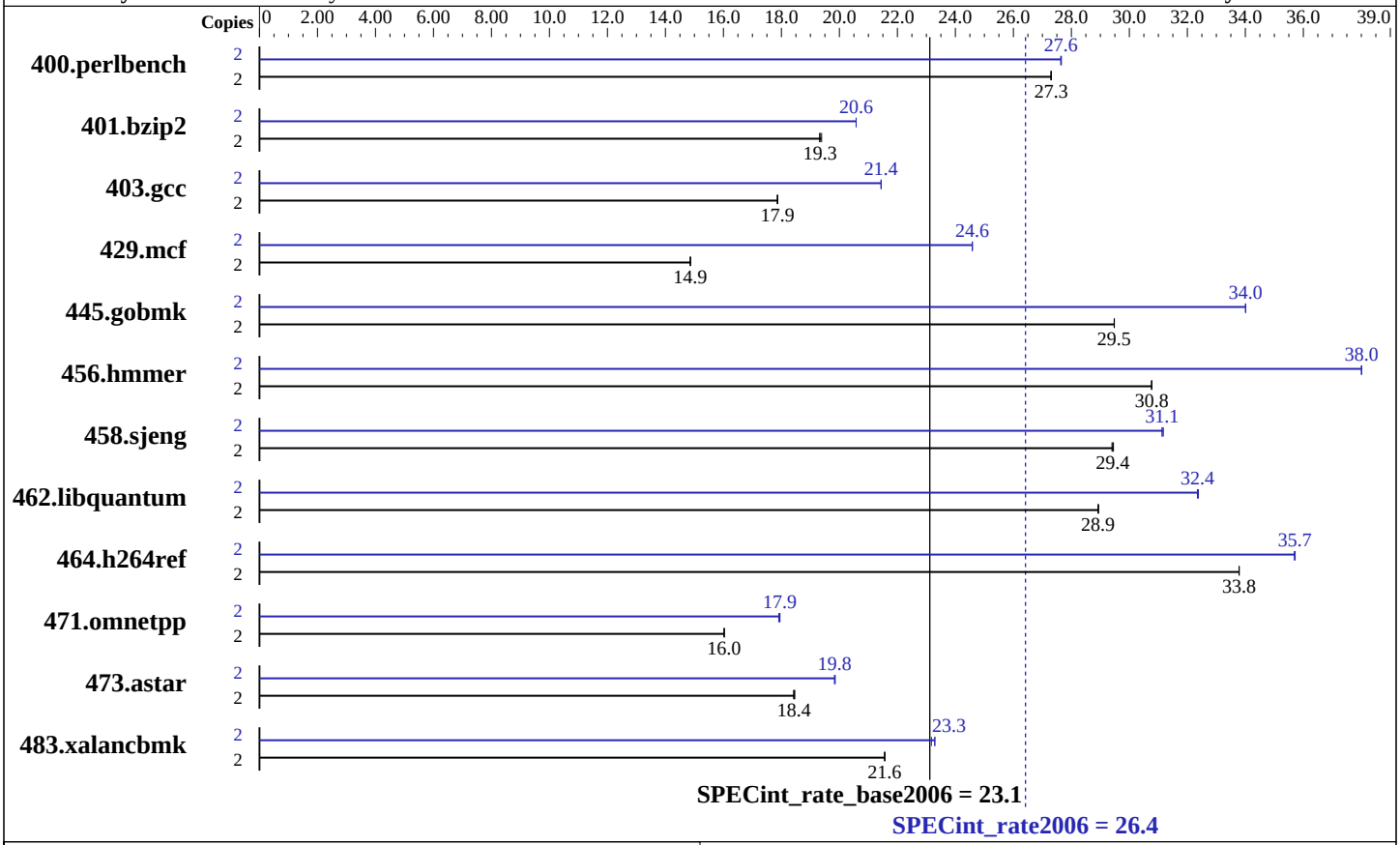
Sun Microsystems
Sun Fire X4200

SPECint®_rate2006 = 26.4

SPECint_rate_base2006 = 23.1

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

Test date: Apr-2006
Hardware Availability: May-2006
Software Availability: Jul-2006



Hardware

CPU Name:	AMD Opteron 256
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	2 cores, 2 chips, 1 core/chip
CPU(s) orderable:	1-2 chips
Primary Cache:	64 KB I + 64 KB D on chip per chip
Secondary Cache:	1 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	16 GB (8x2 GB, PC3200 CL3 DDR ECC Reg)
Disk Subsystem:	SAS,36GB,10K RPM
Other Hardware:	None

Software

Operating System:	Solaris 10 1/06
Compiler:	Sun Studio 11 with patch 120759-06
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	2	715	27.3	**716**	**27.3**	716	27.3	2	**707**	**27.6**	707	27.7	707	27.6
401.bzip2	2	996	19.4	**998**	**19.3**	999	19.3	2	938	20.6	**938**	**20.6**	938	20.6
403.gcc	2	901	17.9	902	17.9	**901**	**17.9**	2	**751**	**21.4**	751	21.4	751	21.4
429.mcf	2	1228	14.9	1227	14.9	**1227**	**14.9**	2	742	24.6	742	24.6	**742**	**24.6**
445.gobmk	2	712	29.5	**712**	**29.5**	712	29.5	2	617	34.0	**617**	**34.0**	617	34.0
456.hmmer	2	606	30.8	**606**	**30.8**	607	30.8	2	491	38.0	491	38.0	**491**	**38.0**
458.sjeng	2	823	29.4	**822**	**29.4**	822	29.5	2	**777**	**31.1**	776	31.2	777	31.1
462.libquantum	2	1432	28.9	1433	28.9	**1433**	**28.9**	2	1280	32.4	1281	32.3	**1281**	**32.4**
464.h264ref	2	1310	33.8	1310	33.8	**1310**	**33.8**	2	1239	35.7	**1240**	**35.7**	1240	35.7
471.omnetpp	2	780	16.0	780	16.0	**780**	**16.0**	2	696	17.9	698	17.9	**697**	**17.9**
473.astar	2	760	18.5	**761**	**18.4**	762	18.4	2	**708**	**19.8**	707	19.9	708	19.8
483.xalancbmk	2	**640**	**21.6**	640	21.6	640	21.6	2	**593**	**23.3**	596	23.2	592	23.3

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

/etc/system parameters
   tune_t_fsflushr=1
      Controls how many seconds elapse between runs of the
      page flush daemon, fsflush.
   autoup=900
      Causes pages older than the listed number of seconds to
      be written by fsflush.
```

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=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

401.bzip2: ONESTEP -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xpagesize=2m
-xcrossfile -xarch=sse2a -M /usr/lib/ld/map.bssalign

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

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

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

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

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

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

C++ benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

471.omnetpp: `-fast -xarch=amd64a -xipo=2 -xprefetch_level=3 -xpagesize=2m -Qoption ube -fsimple=3 -library=stlport4`

473.astar: `-fast -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 -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.20090715.02.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio-Opteron.20090715.02.xml`

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

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