SPEC® CINT2006 Result

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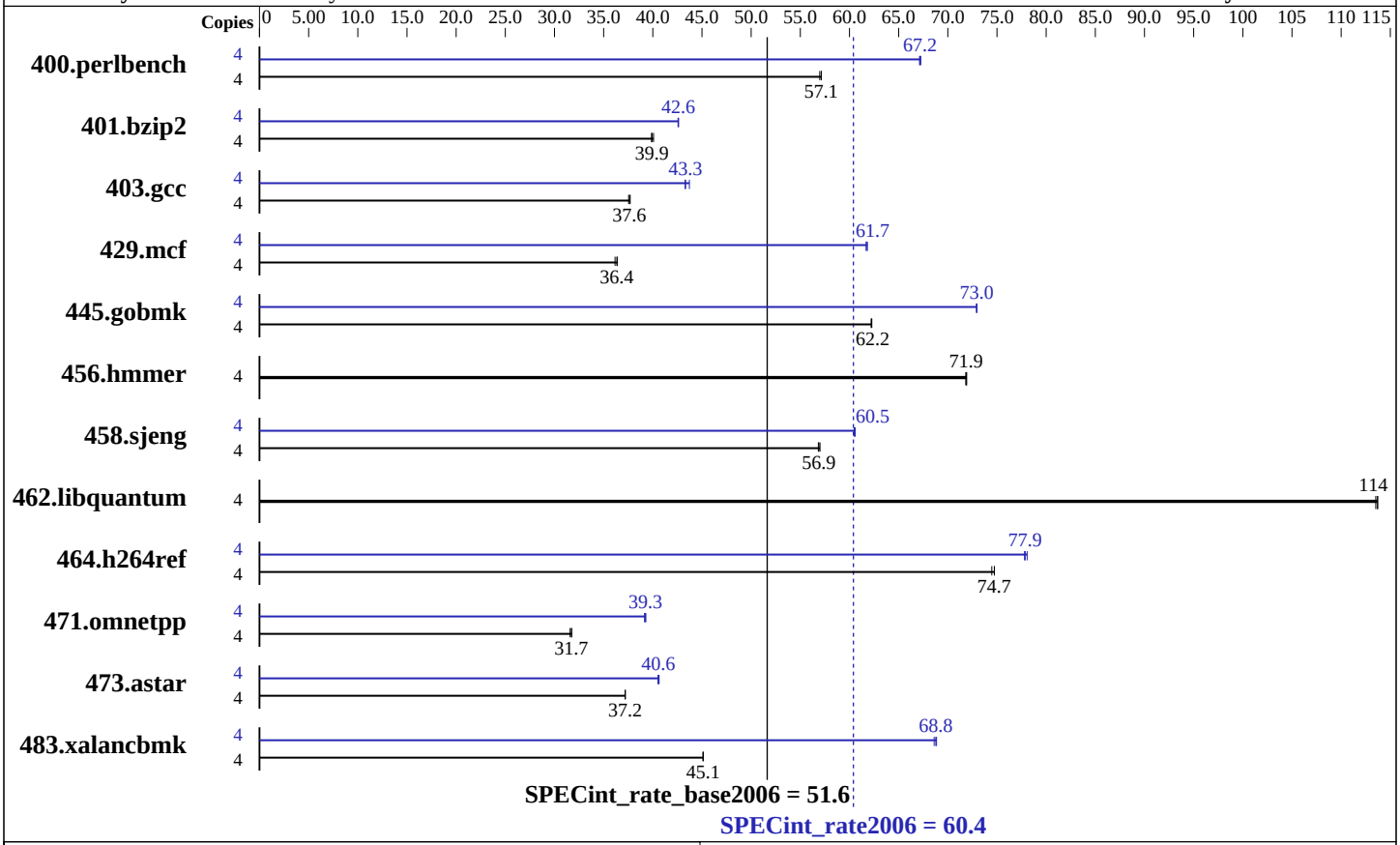
Sun Microsystems
Sun Ultra 40 M2

SPECint®_rate2006 = 60.4

SPECint_rate_base2006 = 51.6

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 2222 SE
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1-2 (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:	32 GB (8x4GB, DDR2-667 CL5 ECC Registered SDRAM)
Disk Subsystem:	SATA, 160 GB, 7200 RPM
Other Hardware:	None

Software

Operating System:	Solaris 10 11/06
Compiler:	Sun Studio 12
Auto Parallel:	No
File System:	ufs
System State:	Multiuser, Runlevel 3
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	4	684	57.1	**684**	**57.1**	686	57.0	4	**582**	**67.2**	582	67.1	581	67.3
401.bzip2	4	963	40.1	968	39.9	**967**	**39.9**	4	907	42.6	**906**	**42.6**	906	42.6
403.gcc	4	854	37.7	**856**	**37.6**	858	37.5	4	744	43.3	**743**	**43.3**	737	43.7
429.mcf	4	1009	36.2	**1004**	**36.4**	1003	36.4	4	**591**	**61.7**	590	61.8	591	61.7
445.gobmk	4	674	62.3	**674**	**62.2**	674	62.2	4	576	72.9	575	73.0	**575**	**73.0**
456.hmmer	4	520	71.8	**519**	**71.9**	519	71.9	4	520	71.8	**519**	**71.9**	519	71.9
458.sjeng	4	852	56.8	**851**	**56.9**	849	57.0	4	800	60.5	799	60.6	**799**	**60.5**
462.libquantum	4	730	114	**729**	**114**	729	114	4	730	114	**729**	**114**	729	114
464.h264ref	4	1189	74.5	1184	74.7	**1185**	**74.7**	4	1138	77.8	1134	78.1	**1137**	**77.9**
471.omnetpp	4	792	31.6	787	31.7	**788**	**31.7**	4	638	39.2	636	39.3	**637**	**39.3**
473.astar	4	755	37.2	755	37.2	**755**	**37.2**	4	691	40.6	**692**	**40.6**	693	40.5
483.xalancbmk	4	**612**	**45.1**	612	45.1	612	45.1	4	402	68.6	401	68.9	**401**	**68.8**

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_SOLARIS

Continued on next page

Peak Portability Flags (Continued)

456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -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: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xalias_level=std -xprefetch_level=2

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: basepeak = yes

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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