



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

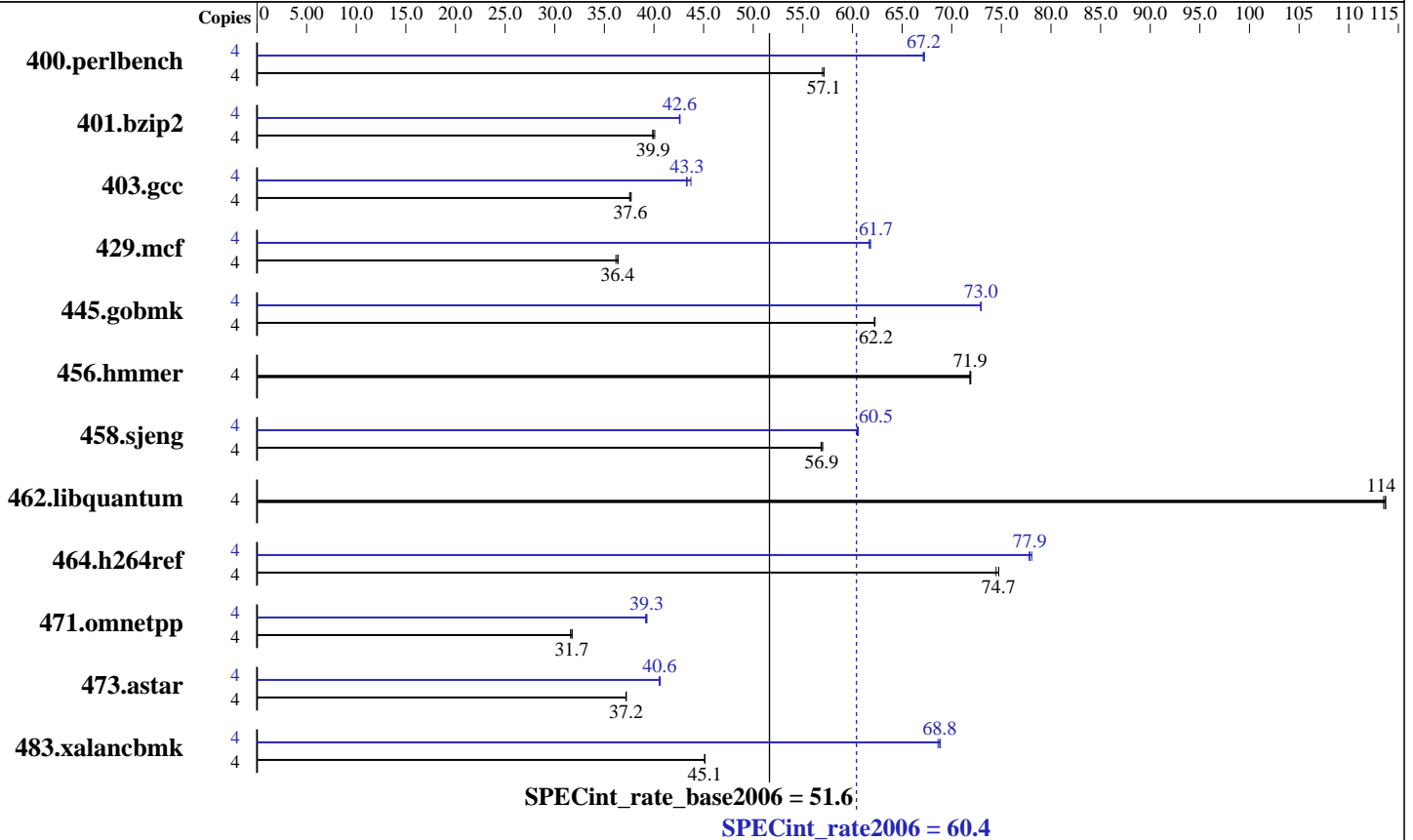
Test sponsor: Sun Microsystems

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.hammer	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



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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.hmmmer: -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
```

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Peak Portability Flags (Continued)

456.hmmr: -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.hmmr: 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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For other inquiries, please contact webmaster@spec.org.

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