SPEC® CINT2006 Result

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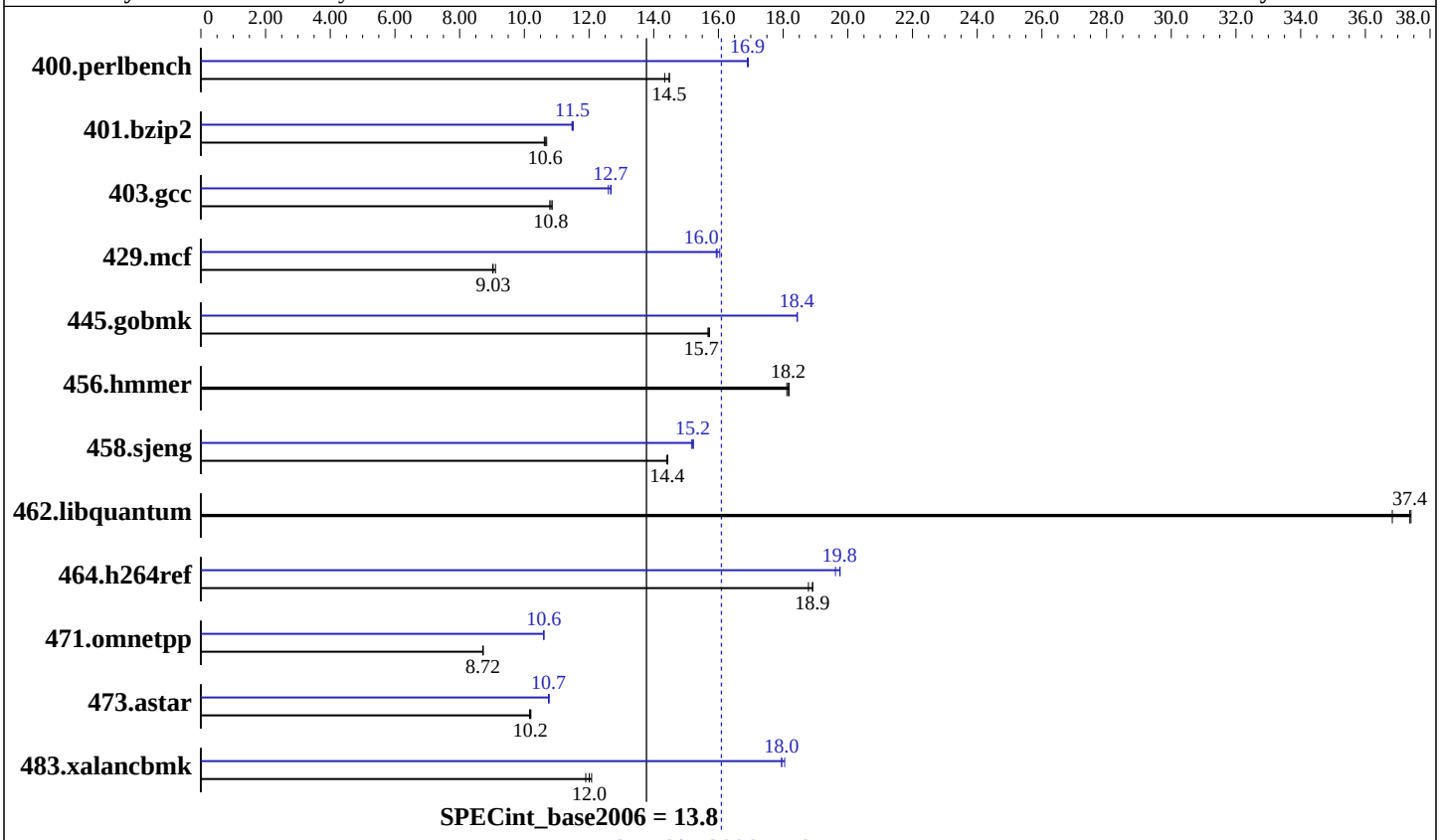
Sun Microsystems
Sun Ultra 40 M2

SPECint®2006 = 16.1

SPECint_base2006 = 13.8

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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	681	14.3	675	14.5	**675**	**14.5**	578	16.9	**578**	**16.9**	577	16.9
401.bzip2	903	10.7	**906**	**10.6**	909	10.6	**840**	**11.5**	841	11.5	838	11.5
403.gcc	741	10.9	**744**	**10.8**	746	10.8	**636**	**12.7**	639	12.6	635	12.7
429.mcf	**1010**	**9.03**	1011	9.02	1001	9.11	569	16.0	**571**	**16.0**	572	15.9
445.gobmk	669	15.7	**669**	**15.7**	667	15.7	569	18.4	**569**	**18.4**	569	18.4
456.hmmer	515	18.1	513	18.2	**514**	**18.2**	515	18.1	513	18.2	**514**	**18.2**
458.sjeng	838	14.4	840	14.4	**839**	**14.4**	797	15.2	**796**	**15.2**	795	15.2
462.libquantum	563	36.8	554	37.4	**554**	**37.4**	563	36.8	554	37.4	**554**	**37.4**
464.h264ref	**1170**	**18.9**	1178	18.8	1170	18.9	1120	19.8	1128	19.6	**1120**	**19.8**
471.omnetpp	**717**	**8.72**	717	8.72	716	8.73	589	10.6	**590**	**10.6**	590	10.6
473.astar	**689**	**10.2**	688	10.2	691	10.2	**653**	**10.7**	653	10.7	652	10.8
483.xalancbmk	571	12.1	**575**	**12.0**	580	11.9	384	18.0	382	18.0	**384**	**18.0**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

```
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

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Base Portability Flags (Continued)

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
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS

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Peak Portability Flags (Continued)

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

473.astar: -fast -xipo=2 -L/data1/SmartHeap_7.4smp/lib -lsmartheap_smp
-library=stlport4

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Peak Optimization Flags (Continued)

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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 11:24:52 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 26 June 2007.