SPEC® CINT2006 Result

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Sun Microsystems

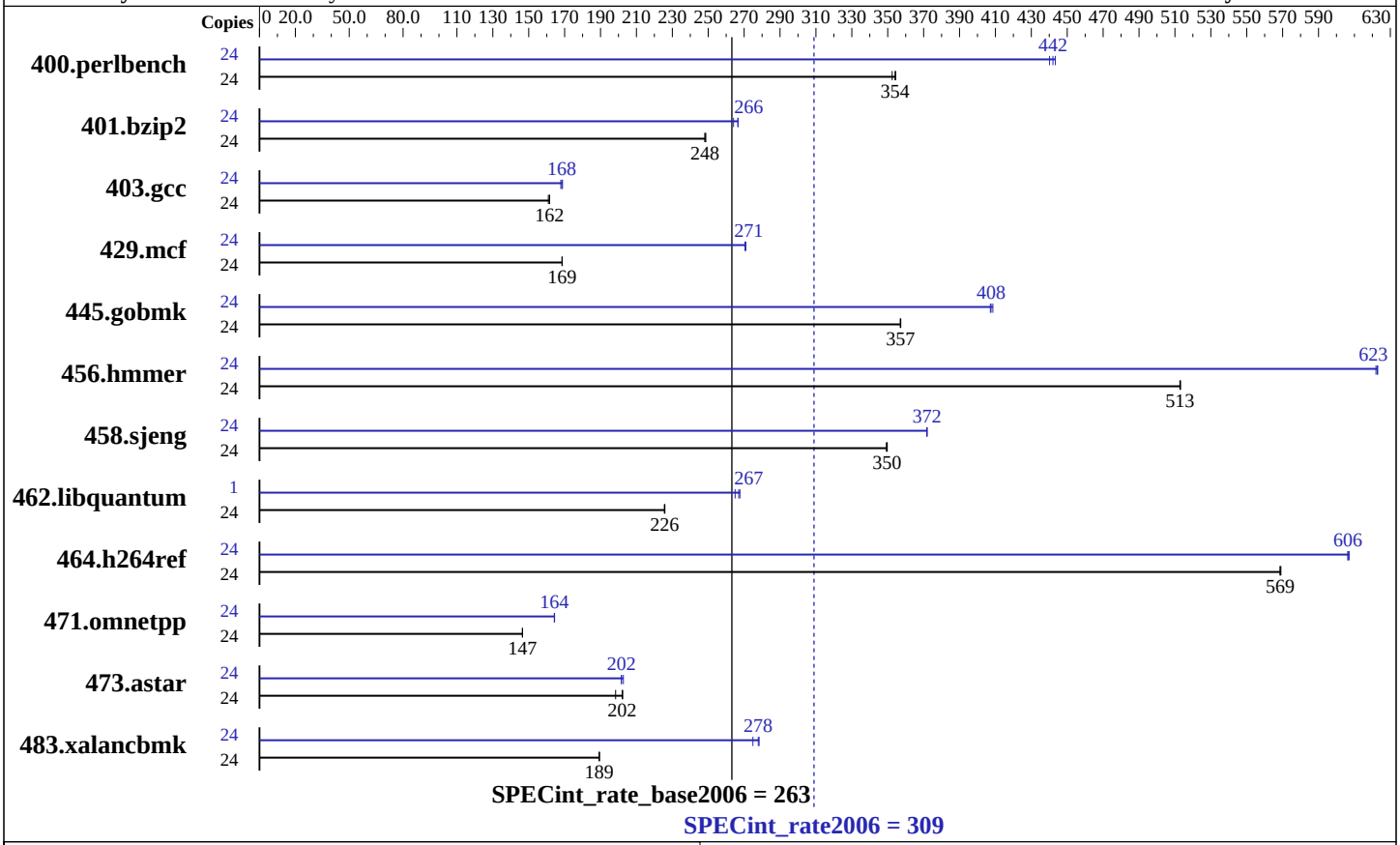
Sun Fire X4600 M2 (AMD Opteron 8384 2.7GHz)

SPECint®_rate2006 = 309

SPECint_rate_base2006 = 263

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

Test date: Dec-2008
Hardware Availability: Jan-2009
Software Availability: Nov-2008



Hardware

CPU Name:	AMD Opteron 8384
CPU Characteristics:	
CPU MHz:	2700
FPU:	Integrated
CPU(s) enabled:	24 cores, 6 chips, 4 cores/chip
CPU(s) orderable:	2, 4, 6, 8 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	6 MB I+D on chip per chip
Other Cache:	None
Memory:	96 GB (48 x 2 GB, DDR2-667 CL5 ECC Registered SDRAM)
Disk Subsystem:	2 x SAS, 72 GB, 10 K RPM
Other Hardware:	2 x Filler Modules

Software

Operating System:	OpenSolaris 2008.05
Compiler:	Sun Studio Express 11/08
Auto Parallel:	Yes
File System:	Benchmark on ufs, OS on zfs
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap 7.4 32-bit Library for Solaris

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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	24	665	352	**662**	**354**	662	354	24	529	443	**530**	**442**	533	440
401.bzip2	24	**933**	**248**	933	248	931	249	24	**869**	**266**	877	264	869	267
403.gcc	24	**1196**	**162**	1201	161	1196	162	24	**1147**	**168**	1144	169	1151	168
429.mcf	24	1298	169	**1298**	**169**	1298	169	24	**809**	**271**	808	271	809	270
445.gobmk	24	705	357	705	357	**705**	**357**	24	618	407	616	409	**618**	**408**
456.hmmer	24	437	513	**437**	**513**	436	513	24	360	622	359	623	**360**	**623**
458.sjeng	24	831	349	830	350	**831**	**350**	24	**781**	**372**	781	372	781	372
462.libquantum	24	2202	226	2205	226	**2202**	**226**	1	**77.6**	**267**	78.2	265	77.4	268
464.h264ref	24	934	569	**934**	**569**	933	569	24	**876**	**606**	876	606	875	607
471.omnetpp	24	**1024**	**147**	1024	146	1024	147	24	**913**	**164**	913	164	912	164
473.astar	24	849	198	**834**	**202**	833	202	24	831	203	836	202	**835**	**202**
483.xalancbmk	24	875	189	**875**	**189**	875	189	24	602	275	595	278	**596**	**278**

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

Submit Notes

```
The config file option 'submit' was used.
 Processes were bound to cores using "submit" and "pbind".
```

Operating System Notes

```
export OMP_NUM_THREADS=24
export SUNW_MP_PROCBIND=TRUE
export SUNW_MP_THR_IDLE=SPIN
export OMP_NESTED=FALSE
export STACKSIZE=16384
export OMP_DYNAMIC=TRUE
ulimit -s 131072  (shell): increases stack


/etc/system parameters
   tune_t_fsflushr=1
   autoup=900
   lpg_alloc_prefer=1
```

Platform Notes

```
Default BIOS settings was 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 -xprefetch -m64

C++ benchmarks:
-fast -xipo=2 -xvector=simd -m64 -xpagesize=2m -xprefetch=no
-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_SOLARIS_X64
403.gcc: -DSPEC_CPU_LP64 -DSPEC_CPU_SOLARIS
462.libquantum: -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 -lbsdmalloc
-xvector=simd -xpagesize=2M -xprefetch=no
-L/data1/SmartHeap_7.4/lib -R/data1/SmartHeap_7.4/lib -lsmartheap
-xalias_level=std

401.bzip2: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xalias_level=strong -lumem -xpagesize=2M -xprefetch=no
-Wu,-fsimple=3

403.gcc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xalias_level=std -xprefetch=no -xpagesize=2M -m64
-Wu,-fsimple=3

429.mcf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xalias_level=strict -xprefetch=no%auto -lbsdmalloc
-Wu,-fsimple=3

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -m64 -xrestrict
-xalias_level=strong -xdepend -xpagesize=2m -lmvec
-Wu,-fsimple=3

456.hmmer: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-Wu,-fsimple=3

458.sjeng: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xvector=simd -m64 -xrestrict -xpagesize=2M -xprefetch=no

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Peak Optimization Flags (Continued)

458.sjeng (continued):
-xalias_level=std -Wu,-fsimple=3

462.libquantum: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xreduction -xipo=2
-xvector=simd -m64 -xautopar -xunroll=8 -lmtmalloc
-Wu,-fsimple=3 -xalias_level=std

464.h264ref: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xalias_level=std -Wu,-fsimple=3

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xvector=simd -lumem -xpagesize=2M -xprefetch=no
-L/data1/SmartHeap_7.4/lib -R/data1/SmartHeap_7.4/lib -lsmartheap
-xalias_level=compatible -Qoption ube -fsimple=3
-qoption ube -sched_first_pass=0 -library=stlport4

473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2m -M /usr/lib/ld/map.bssalign -xprefetch=no
-xvector=simd -xdepend -xalias_level=simple
-Qoption ube -fsimple=3 -library=stlport4

483.xalancbmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-Qoption ube -fsimple=3 -xvector=simd -lumem
-L/data1/SmartHeap_7.4/lib -R/data1/SmartHeap_7.4/lib -lsmartheap
-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-OpenSolaris-Studio-x86_64.20090713.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090713.00.xml

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