



SPEC® CINT2006 Result

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Sun Microsystems

SPECint®_rate2006 = 309

Sun Fire X4600 M2 (AMD Opteron 8384 2.7GHz)

SPECint_rate_base2006 = 263

CPU2006 license: 6

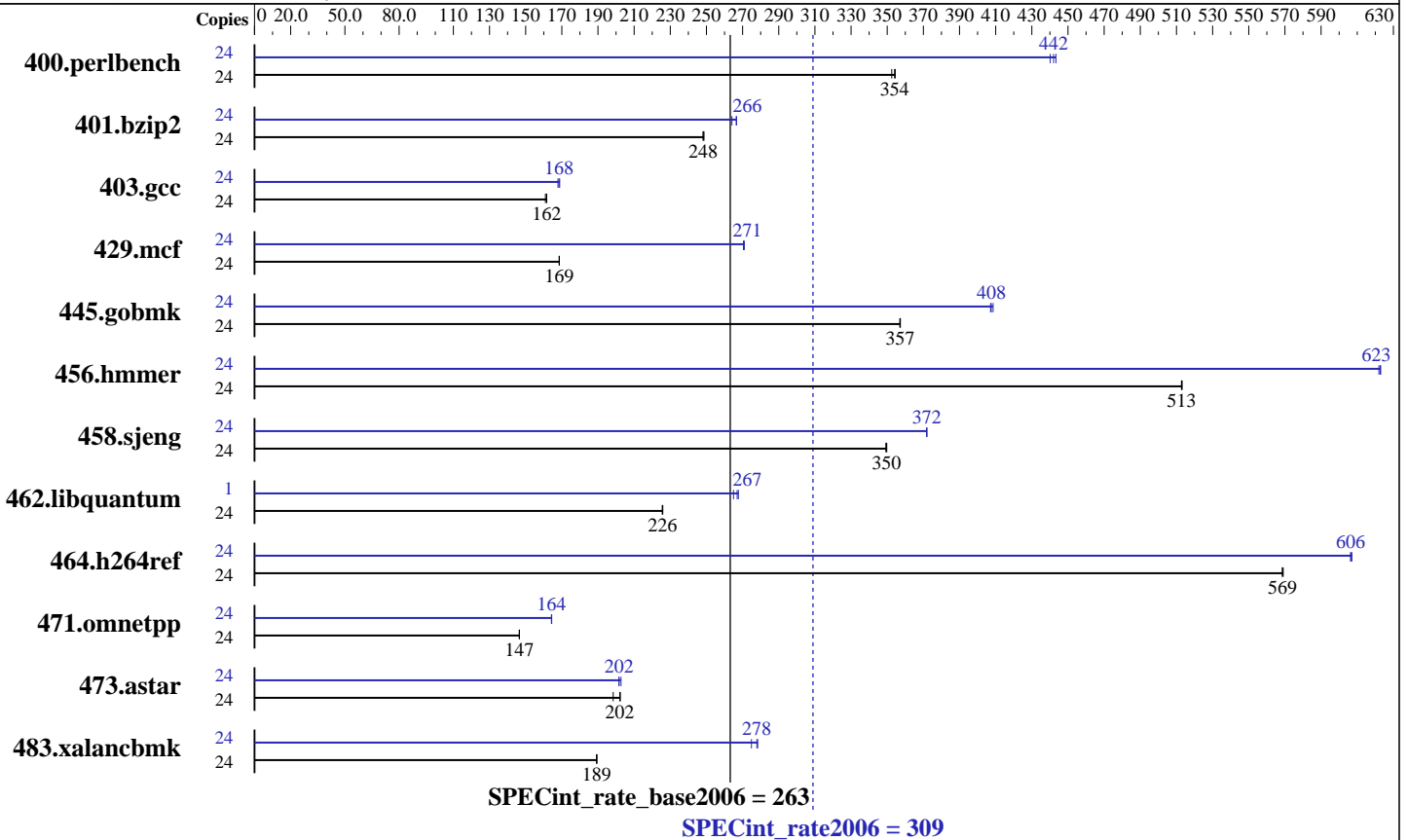
Test sponsor: Sun Microsystems

Tested by: Sun Microsystems

Test date: Dec-2008

Hardware Availability: Jan-2009

Software Availability: Nov-2008



Hardware

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

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.hammer	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.



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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

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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.bzp2: -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.hmmr: -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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