



SPEC® CINT2006 Result

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Sun Microsystems

SPECint®2006 = 36.5

Sun Fire X2270 (Intel Xeon X5570 2.93GHz)

SPECint_base2006 = 29.6

CPU2006 license: 6

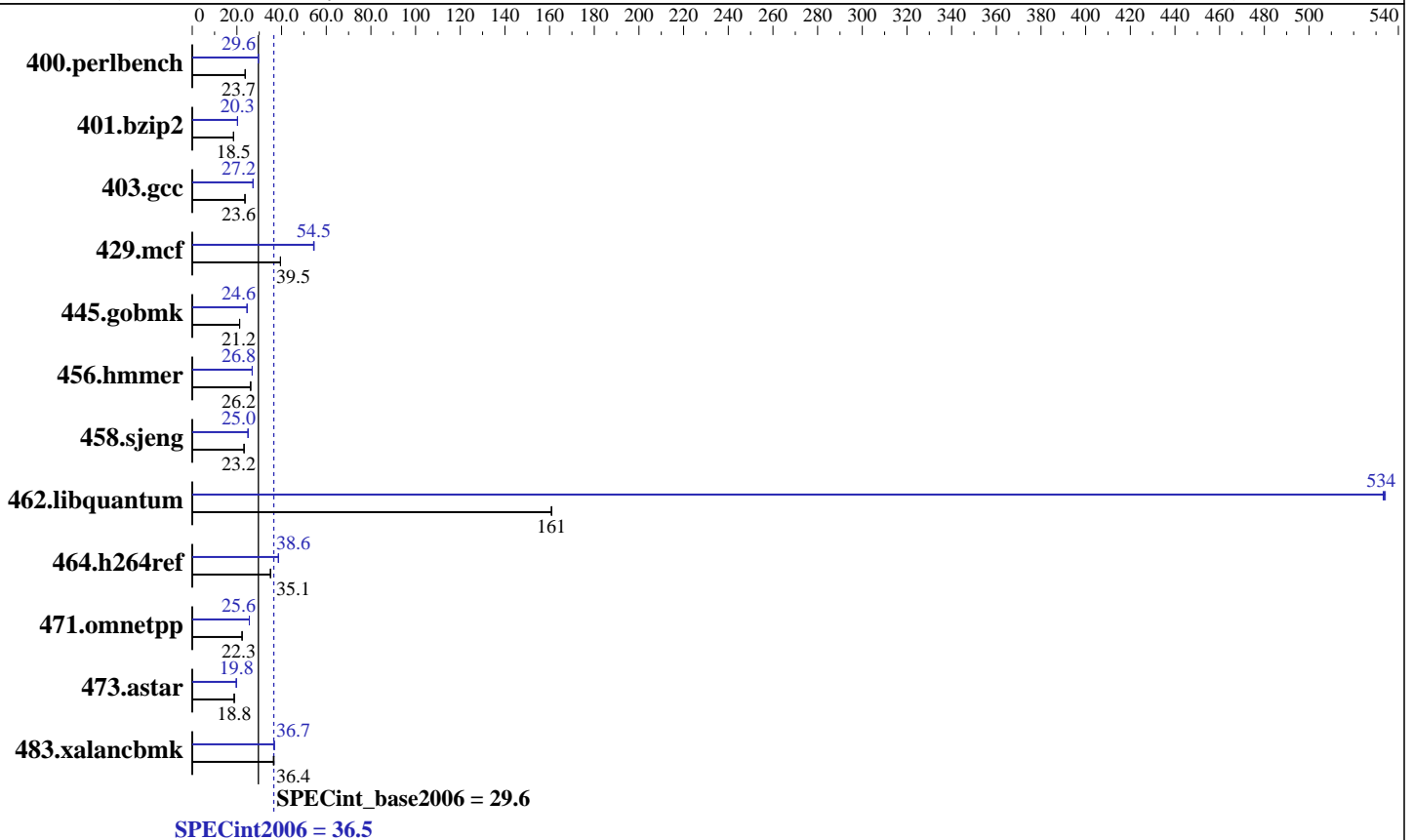
Test date: Apr-2009

Test sponsor: Sun Microsystems

Hardware Availability: Apr-2009

Tested by: Sun Microsystems

Software Availability: Jun-2009



Hardware

CPU Name: Intel Xeon X5570
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz
 CPU MHz: 2933
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1 or 2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 24 GB (6 x 4 GB DDR3-1333)
 Disk Subsystem: 1 x 1 TB, SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: OpenSolaris 2008.11
 Compiler: Sun Studio 12 Update 1 (backend build 20090309)
 Auto Parallel: Yes
 File System: zfs with gzip compression
 System State: Default
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: MicroQuill SmartHeap Library 9.01 for x64



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	413	23.7	412	23.7	411	23.8	331	29.5	330	29.6	330	29.6
401.bzip2	522	18.5	522	18.5	521	18.5	476	20.3	476	20.3	476	20.3
403.gcc	341	23.6	340	23.6	341	23.6	296	27.2	296	27.2	296	27.2
429.mcf	231	39.5	231	39.5	231	39.5	168	54.3	167	54.5	167	54.6
445.gobmk	494	21.2	495	21.2	494	21.2	427	24.6	427	24.6	427	24.6
456.hammer	357	26.1	357	26.2	357	26.2	347	26.9	348	26.8	348	26.8
458.sjeng	521	23.2	521	23.2	521	23.2	484	25.0	484	25.0	484	25.0
462.libquantum	129	161	129	161	129	161	38.8	534	38.9	533	38.8	534
464.h264ref	631	35.0	631	35.1	631	35.1	574	38.5	573	38.6	573	38.6
471.omnetpp	280	22.3	280	22.3	280	22.3	244	25.6	244	25.6	245	25.6
473.astar	373	18.8	373	18.8	373	18.8	356	19.7	355	19.8	355	19.8
483.xalancbmk	190	36.4	190	36.4	188	36.6	188	36.7	188	36.7	188	36.7

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

Operating System Notes

```
ulimit -s 131072 (shell): increases stack
/etc/system parameters
  tune_t_fsflushr=10
  autoup=900
  set lpg_alloc_prefer=1
  set zfs:zfs_arc_max = 0x10000000
```

Platform Notes

Default BIOS settings used except:
 Intel VT-d: Disabled. VT-d, if enabled, supports remapping of I/O DMA transfers for virtualization.

General Notes

Environment variables set by runspec before the start of the run:
 OMP_NUM_THREADS = "8"
 SUNW_MP_PROCBIND = "true"
 SUNW_MP_THR_IDLE = "SPIN"

Base Compiler Invocation

C benchmarks:
 /data1/20090309_ceres_x86/bin/cc

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Base Compiler Invocation (Continued)

C++ benchmarks:

/data1/20090309_ceres_x86/bin/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 -m64 -xprefetch

C++ benchmarks:

-fast -xipo=2 -m64 -xpagesize=2M -xvector=simd -xprefetch=no%auto
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap64
-library=stlport4

Base Other Flags

C benchmarks:

-V -# -xjobs=16

C++ benchmarks:

-verbose=diags,version -xjobs=16

Peak Compiler Invocation

C benchmarks:

/data1/20090309_ceres_x86/bin/cc

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Peak Compiler Invocation (Continued)

C++ benchmarks:

/data1/20090309_ceres_x86/bin/CC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_SOLARIS_IA32
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
-xpagesize=2M -xvector=simd -xalias_level=std
-xprefetch=no%auto -lbsdmalloc -lumem

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

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

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

445.gobmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -m64 -xpagesize=2M
-xrestrict -xalias_level=strong -xdepend -xautopar -lmvec

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

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

462.libquantum: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xautopar -xreduction

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Peak Optimization Flags (Continued)

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

C++ benchmarks:

471.omnetpp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap
-library=stlport4

473.astar: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap_mt64
-xalias_level=compatible -library=stlport4 -xautopar

483.xalancbmk: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M -xunroll=8 -xvector=simd
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap
-library=stlport4

Peak Other Flags

C benchmarks:

-V -# -xjobs=16

C++ benchmarks:

-verbose=diags,version -xjobs=16

The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.00.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.00.xml



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