



SPEC® CINT2006 Result

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Sun Microsystems

SPECint®2006 = 36.8

Sun Ultra 27 (Intel Xeon W3570 3.2GHz)

SPECint_base2006 = 31.7

CPU2006 license: 6

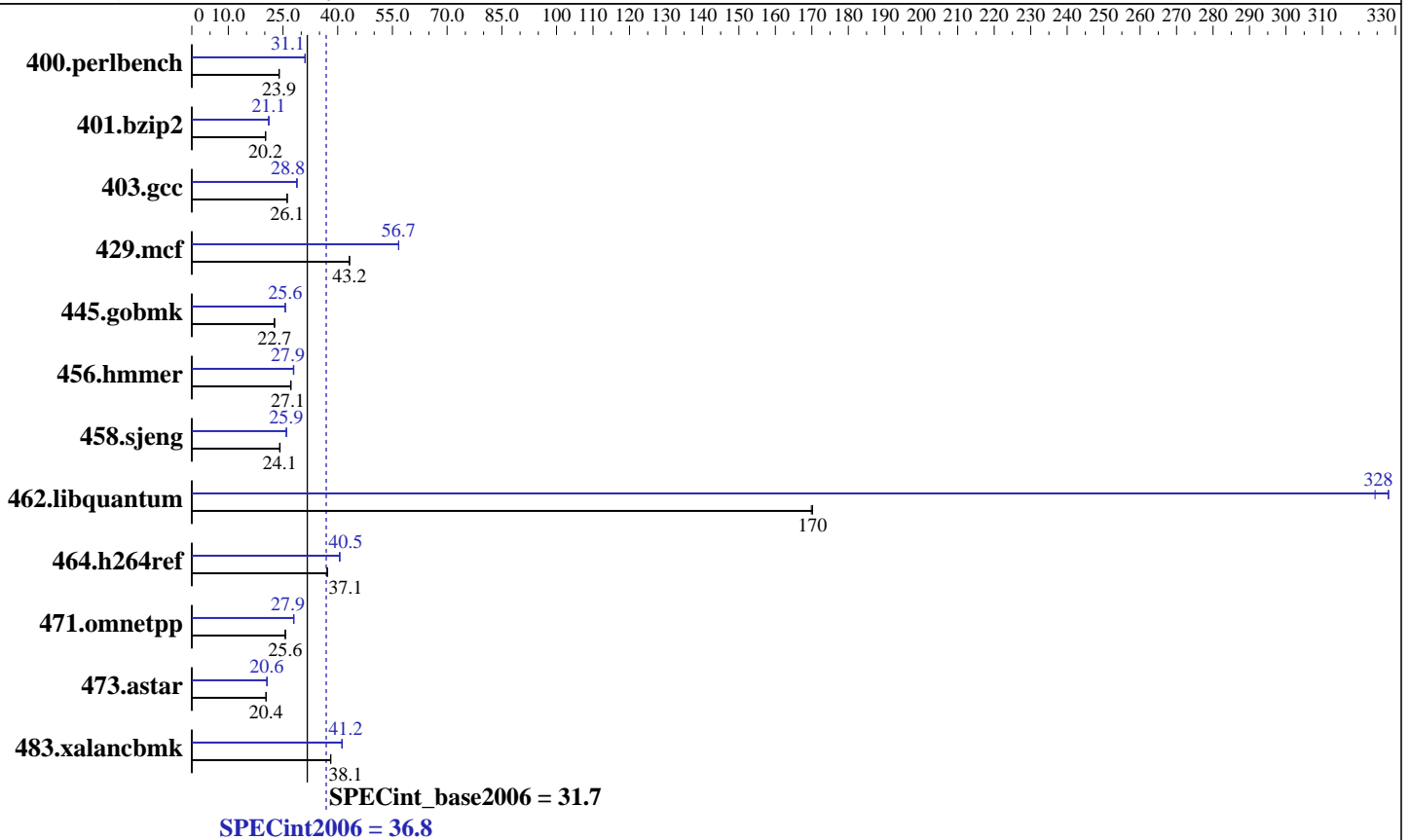
Test sponsor: Sun Microsystems

Tested by: Sun Microsystems

Test date: Apr-2009

Hardware Availability: Apr-2009

Software Availability: Jun-2009



Hardware

CPU Name: Intel Xeon W3570
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
 CPU MHz: 3200
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1 chip
 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: 6 GB (3 x 2 GB DDR3-1333)
 Disk Subsystem: 500 GB, SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: OpenSolaris 2008.11
 Compiler: Sun Studio 12 Update 1 (internal build 39.0)
 Auto Parallel: Yes
 File System: zfs
 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	408	23.9	408	23.9	408	23.9	<u>315</u>	<u>31.1</u>	315	31.0	315	31.1
401.bzip2	478	20.2	478	20.2	477	20.2	<u>457</u>	<u>21.1</u>	457	21.1	458	21.1
403.gcc	308	26.1	308	26.1	308	26.1	279	28.8	280	28.8	<u>279</u>	28.8
429.mcf	211	43.2	211	43.2	211	43.2	<u>161</u>	<u>56.7</u>	161	56.7	161	56.7
445.gobmk	463	22.7	463	22.7	463	22.6	409	25.6	409	25.6	410	25.6
456.hammer	344	27.1	344	27.1	343	27.2	<u>335</u>	<u>27.9</u>	334	28.0	335	27.9
458.sjeng	502	24.1	502	24.1	500	24.2	466	25.9	467	25.9	467	25.9
462.libquantum	122	170	122	170	122	170	<u>63.2</u>	<u>328</u>	63.9	324	63.1	328
464.h264ref	595	37.2	596	37.1	596	37.1	545	40.6	546	40.5	546	40.5
471.omnetpp	244	25.6	244	25.7	244	25.6	224	28.0	224	27.9	<u>224</u>	27.9
473.astar	345	20.4	345	20.4	345	20.4	341	20.6	341	20.6	340	20.6
483.xalancbmk	181	38.0	181	38.1	181	38.1	<u>168</u>	<u>41.2</u>	168	41.2	168	41.2

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
```

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 = "4"
 SUNW_MP_PROCBIND = "true"
 SUNW_MP_THR_IDLE = "SPIN"

Base Compiler Invocation

C benchmarks:
 /data1/SUNWspro.b39/SUNWspro/bin/cc

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Base Compiler Invocation (Continued)

C++ benchmarks:

/data1/SUNWspro.b39/SUNWspro/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 -xpagesize=2M -xprefetch -xalias_level=std

C++ benchmarks:

-fast -xipo=2 -m64 -xpagesize=2M -xvector=simd -xprefetch=no%auto
 -xalias_level=compatible
 -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/SUNWspro.b39/SUNWspro/bin/cc

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Peak Compiler Invocation (Continued)

C++ benchmarks:

/data1/SUNWspro.b39/SUNWspro/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: -fast -xipo=2 -m64 -xpagesize=2M -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
-xpagesize=2M -xalias_level=strong -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 -m64
-xpagesize=2M -xunroll=12
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap64
-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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