



SPEC® CINT2006 Result

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Sun Microsystems

SPECint®2006 = 36.9

Sun Blade X6270 (Intel Xeon X5570 2.93GHz)

SPECint_base2006 = 30.0

CPU2006 license: 6

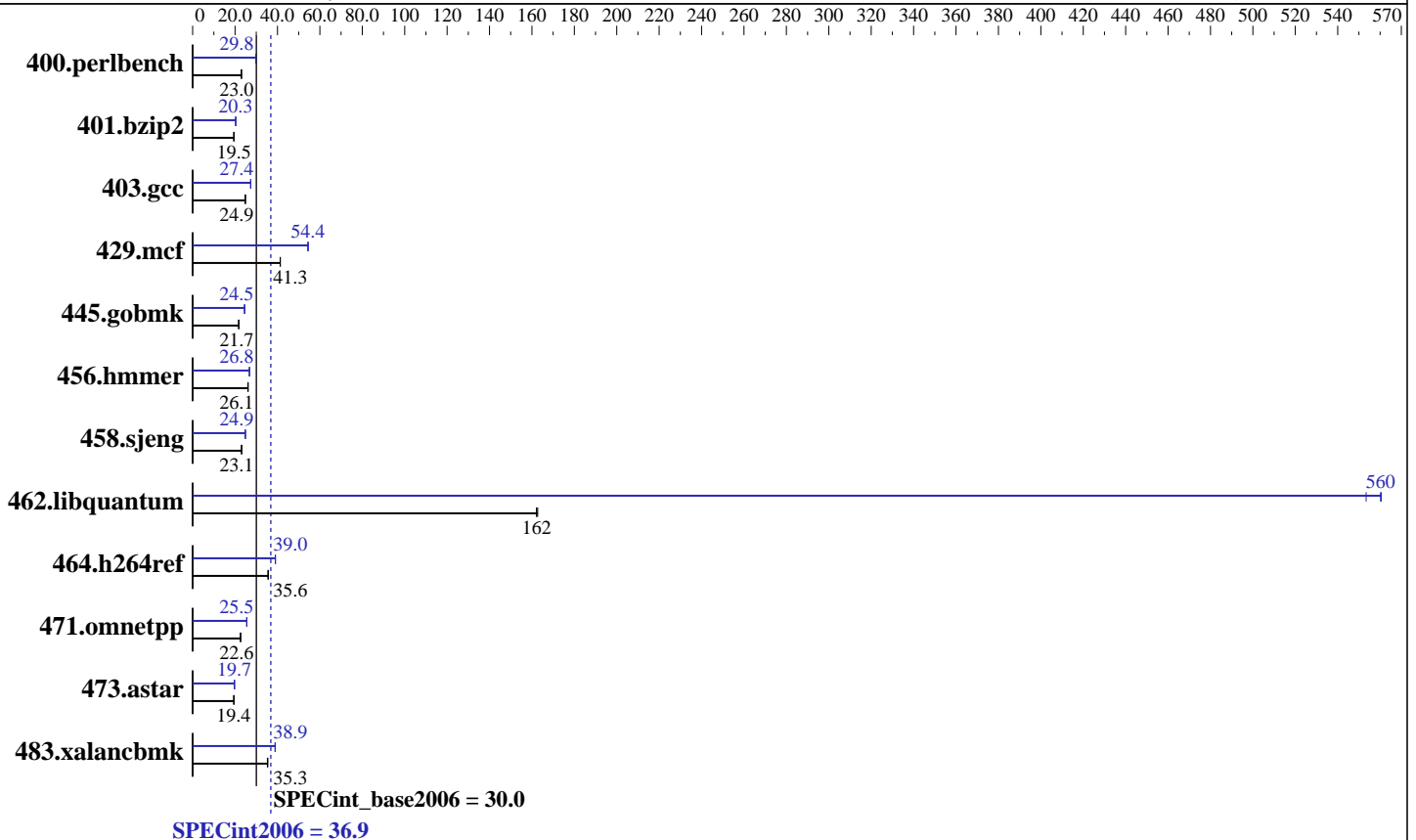
Test date: Apr-2009

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: 134 GB using 1x ST914602SSUN146GSAS SAS 10 K 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 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 | 425 | 23.0 | 424 | 23.0 | <u>424</u> | <u>23.0</u> | <u>328</u> | <u>29.8</u> | 328 | 29.8 | 329 | 29.7 |
| 401.bzip2 | 496 | 19.4 | 496 | 19.5 | <u>496</u> | <u>19.5</u> | 475 | 20.3 | <u>475</u> | <u>20.3</u> | 475 | 20.3 |
| 403.gcc | 324 | 24.9 | <u>324</u> | <u>24.9</u> | 324 | 24.8 | <u>294</u> | <u>27.4</u> | 294 | 27.4 | 294 | 27.4 |
| 429.mcf | 221 | 41.3 | <u>221</u> | <u>41.3</u> | 221 | 41.3 | <u>167</u> | <u>54.4</u> | 167 | 54.5 | 168 | 54.4 |
| 445.gobmk | 482 | 21.7 | <u>482</u> | <u>21.7</u> | 482 | 21.8 | 427 | 24.5 | <u>428</u> | <u>24.5</u> | 429 | 24.4 |
| 456.hammer | 357 | 26.1 | 357 | 26.1 | <u>357</u> | <u>26.1</u> | 348 | 26.8 | <u>348</u> | <u>26.8</u> | 348 | 26.8 |
| 458.sjeng | 524 | 23.1 | <u>524</u> | <u>23.1</u> | 524 | 23.1 | <u>487</u> | <u>24.9</u> | 487 | 24.8 | 487 | 24.9 |
| 462.libquantum | <u>128</u> | <u>162</u> | 128 | 162 | 127 | 163 | <u>37.0</u> | <u>560</u> | 37.4 | 553 | 37.0 | 561 |
| 464.h264ref | 621 | 35.6 | 622 | 35.6 | <u>621</u> | <u>35.6</u> | 567 | 39.0 | <u>567</u> | <u>39.0</u> | 567 | 39.0 |
| 471.omnetpp | 276 | 22.7 | 277 | 22.6 | <u>277</u> | <u>22.6</u> | 244 | 25.6 | <u>245</u> | <u>25.5</u> | 245 | 25.5 |
| 473.astar | 361 | 19.4 | 361 | 19.4 | <u>361</u> | <u>19.4</u> | 356 | 19.7 | 356 | 19.7 | <u>356</u> | <u>19.7</u> |
| 483.xalancbmk | 195 | 35.5 | <u>195</u> | <u>35.3</u> | 196 | 35.2 | 177 | 39.0 | <u>177</u> | <u>38.9</u> | 177 | 38.9 |

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

AMIBIOS Build Date 1/26/09 ID 07.01.36.00
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"



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Base Compiler Invocation

C benchmarks:

/data1/SUNWspro.b39/SUNWspro/bin/cc

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.hmmr: -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.xalancmk: -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 -lsmarheap64
 -library=stlport4

Base Other Flags

C benchmarks:

-V -# -xjobs=16

C++ benchmarks:

-verbose=diags,version -xjobs=16



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Peak Compiler Invocation

C benchmarks:

/data1/SUNWspro.b39/SUNWspro/bin/cc

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

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Peak Optimization Flags (Continued)

462.libquantum: -fast -xipo=2 -m64 -xpagesize=2M -xautopar -xreduction

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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