



# SPEC<sup>®</sup> CINT2006 Result

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## SGI

SGI Rackable C2005-TY3 (Intel Xeon X5687, 3.60 GHz)

**SPECint<sup>®</sup>2006 = 49.3**

**SPECint\_base2006 = 47.0**

CPU2006 license: 4

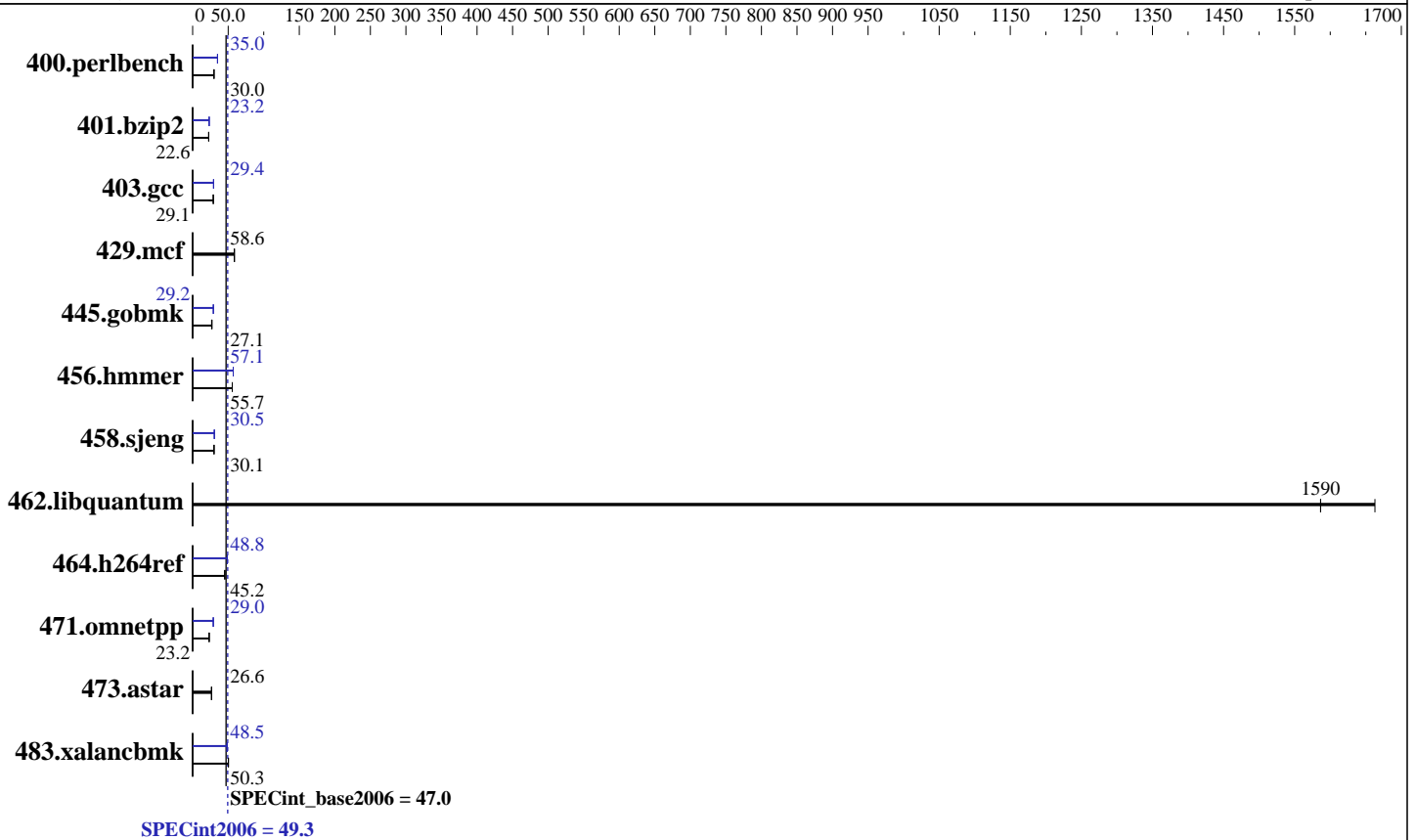
Test sponsor: SGI

Tested by: SGI

Test date: Aug-2011

Hardware Availability: Feb-2011

Software Availability: Sep-2011



### Hardware

CPU Name: Intel Xeon X5687  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.86 GHz  
 CPU MHz: 3600  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 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: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (6 x 8 GB 2Rx4 PC3-10600R-9, ECC)  
 Disk Subsystem: 876 GB RAID 5  
 Other Hardware: 6 x 146 GB SAS, 15000 RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64) SP1, kernel 2.6.32.36-0.5-default  
 Compiler: Intel C++ Compiler XE for applications running on IA32 and Intel 64 12.1.0.225 Build 20110803  
 Auto Parallel: Yes  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	326	30.0	<u>325</u>	<u>30.0</u>	325	30.0	280	34.9	279	35.0	<u>279</u>	<u>35.0</u>
401.bzip2	427	22.6	427	22.6	<u>427</u>	<u>22.6</u>	415	23.2	415	23.2	<u>415</u>	<u>23.2</u>
403.gcc	277	29.1	<u>277</u>	<u>29.1</u>	277	29.0	273	29.4	274	29.4	<u>274</u>	<u>29.4</u>
429.mcf	156	58.6	155	58.8	<u>156</u>	<u>58.6</u>	156	58.6	155	58.8	<u>156</u>	<u>58.6</u>
445.gobmk	386	27.2	394	26.7	<u>388</u>	<u>27.1</u>	360	29.1	<u>360</u>	<u>29.2</u>	360	29.2
456.hammer	167	55.7	<u>167</u>	<u>55.7</u>	167	55.7	<u>163</u>	<u>57.1</u>	163	57.1	163	57.1
458.sjeng	<u>403</u>	<u>30.1</u>	403	30.1	402	30.1	396	30.5	396	30.5	<u>396</u>	<u>30.5</u>
462.libquantum	<u>13.1</u>	<u>1590</u>	12.5	1660	13.1	1590	<u>13.1</u>	<u>1590</u>	12.5	1660	13.1	1590
464.h264ref	489	45.3	<u>489</u>	<u>45.2</u>	490	45.2	<u>454</u>	<u>48.8</u>	454	48.8	454	48.8
471.omnetpp	270	23.2	269	23.3	<u>269</u>	<u>23.2</u>	215	29.0	<u>215</u>	<u>29.0</u>	215	29.1
473.astar	264	26.6	264	26.6	<u>264</u>	<u>26.6</u>	264	26.6	264	26.6	<u>264</u>	<u>26.6</u>
483.xalancbmk	<u>137</u>	<u>50.3</u>	137	50.5	137	50.2	142	48.5	<u>142</u>	<u>48.5</u>	143	48.4

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

## General Notes

Environment variables set by runspec before the start of the run:

KMP\_AFFINITY = "granularity=fine,scatter"

LD\_LIBRARY\_PATH = "/scratch/cma/cpu2006-1.1/smartheap:/scratch/cma/cpu2006-1.1/ic12.1-libs/ia32:/scratch/cma/cpu2006-1.1/ic12.1-libs/intel64"

OMP\_NUM\_THREADS = "8"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory

using RHEL5.5 with binutils-2.17.50.0.6-14.el5

Stack size set to unlimited using "ulimit -s unlimited"

## Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

401.bzip2: -DSPEC\_CPU\_LP64

403.gcc: -DSPEC\_CPU\_LP64

429.mcf: -DSPEC\_CPU\_LP64

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## Base Portability Flags (Continued)

445.gobmk: -DSPEC\_CPU\_LP64  
 456.hmmer: -DSPEC\_CPU\_LP64  
 458.sjeng: -DSPEC\_CPU\_LP64  
 462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
 464.h264ref: -DSPEC\_CPU\_LP64  
 471.omnetpp: -DSPEC\_CPU\_LP64  
 473.astar: -DSPEC\_CPU\_LP64  
 483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/smartheap -lsmartheap64

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64



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**CPU2006 license:** 4

**Test sponsor:** SGI

**Tested by:** SGI

**Test date:** Aug-2011

**Hardware Availability:** Feb-2011

**Software Availability:** Sep-2011

## Peak Portability Flags

```

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

```

## Peak Optimization Flags

C benchmarks:

```

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
               -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
               -opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
            -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
            -opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-alloc
          -opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
           -ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
           -ansi-alias

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
            -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
            -unroll4

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
              -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
              -unroll2 -ansi-alias

```

C++ benchmarks:

```

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
              -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
              -opt-ra-region-strategy=block -ansi-alias -Wl,-z,muldefs
              -L/smartheap -lsmartheap

```

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## Peak Optimization Flags (Continued)

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
-Wl,-z,muldefs -L/smartheap -lsmartheap

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.html>

<http://www.spec.org/cpu2006/flags/platform.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.xml>

<http://www.spec.org/cpu2006/flags/platform.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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Standard Performance Evaluation Corporation

[info@spec.org](mailto:info@spec.org)

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