



# SPEC<sup>®</sup> CINT2006 Result

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## Sun Microsystems Sun Fire X4150

SPECint<sup>®</sup>\_rate2006 = 81.3

SPECint\_rate\_base2006 = 69.4

CPU2006 license: 6

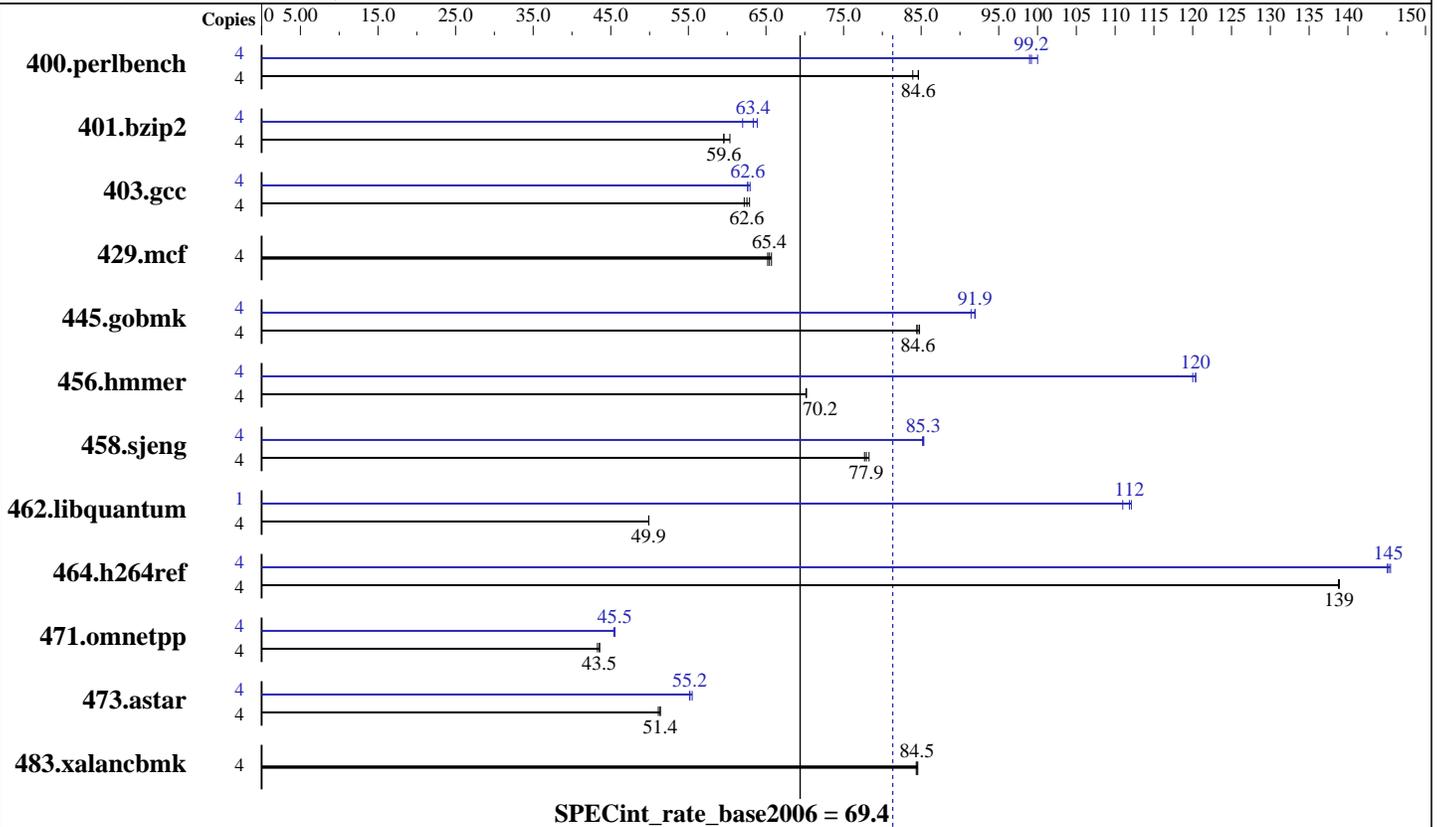
Test sponsor: Sun Microsystems

Tested by: Sun Microsystems

Test date: Dec-2007

Hardware Availability: Feb-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5260  
 CPU Characteristics: 3.33 GHz, 6 MB L2 shared, 1333 MHz system bus  
 CPU MHz: 3333  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2 (order by number of chips)  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 16 GB (8x2GB DDR2 PC2-5300F 2rank CAS 5-5-5 with ECC)  
 Disk Subsystem: SAS, 72 GB, 10K RPM  
 Other Hardware: None

### Software

Operating System: SUSE LINUX Enterprise Server 10 SP1 for x86\_64  
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user, run level 3  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap library V8.1 Binutils 2.17.50.0.15



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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	4	466	83.9	462	84.7	<b>462</b>	<b>84.6</b>	4	395	99.0	391	100	<b>394</b>	<b>99.2</b>
401.bzip2	4	648	59.6	<b>648</b>	<b>59.6</b>	640	60.3	4	604	63.9	<b>609</b>	<b>63.4</b>	623	62.0
403.gcc	4	512	62.9	<b>515</b>	<b>62.6</b>	518	62.2	4	<b>514</b>	<b>62.6</b>	514	62.6	511	63.0
429.mcf	4	555	65.7	559	65.2	<b>557</b>	<b>65.4</b>	4	555	65.7	559	65.2	<b>557</b>	<b>65.4</b>
445.gobmk	4	495	84.8	<b>496</b>	<b>84.6</b>	497	84.4	4	459	91.4	456	91.9	<b>456</b>	<b>91.9</b>
456.hmmmer	4	<b>532</b>	<b>70.2</b>	531	70.2	532	70.2	4	310	120	<b>310</b>	<b>120</b>	311	120
458.sjeng	4	618	78.3	623	77.7	<b>621</b>	<b>77.9</b>	4	567	85.3	<b>568</b>	<b>85.3</b>	568	85.2
462.libquantum	4	<b>1661</b>	<b>49.9</b>	1661	49.9	1661	49.9	1	<b>185</b>	<b>112</b>	187	111	185	112
464.h264ref	4	638	139	637	139	<b>637</b>	<b>139</b>	4	610	145	<b>609</b>	<b>145</b>	608	145
471.omnetpp	4	574	43.6	<b>574</b>	<b>43.5</b>	578	43.3	4	<b>549</b>	<b>45.5</b>	549	45.5	551	45.4
473.astar	4	<b>547</b>	<b>51.4</b>	549	51.1	547	51.4	4	<b>509</b>	<b>55.2</b>	506	55.5	509	55.2
483.xalancbmk	4	<b>327</b>	<b>84.5</b>	327	84.4	326	84.6	4	<b>327</b>	<b>84.5</b>	327	84.4	326	84.6

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

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited  
OMP\_NUM\_THREADS set to 4  
KMP\_STACKSIZE set to 64M  
KMP\_AFFINITY set to physical,0

## Platform Notes

BIOS configuration:  
Hardware Prefetch = Disable; Adjacent Sector Prefetch = Disable

## General Notes

All benchmarks were compiled in 32-bit mode except 401.bzip2 and 456.hmmmer for peak were compiled in 64-bit mode

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-fast -inline-calloc -opt-malloc-options=3  
C++ benchmarks:  
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc  
401.bzip2: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc  
456.hmmer: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc  
C++ benchmarks:  
icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX



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## Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias  
-prefetch

401.bzip2: -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include  
-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: basepeak = yes

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo  
-no-prec-div -ansi-alias

456.hmmer: -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include  
-fast -unroll2 -ansi-alias -opt-multi-version-aggressive

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch  
-opt-streaming-stores always -vec-guard-write  
-opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
-no-prec-div -ansi-alias -opt-ra-region-strategy=block  
-Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine  
-Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.0/lib -lsmartheap

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



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

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.24.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.24.xml>

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

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