



# SPEC® CINT2006 Result

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## Sun Microsystems Sun Fire X4450

SPECint®\_rate2006 = 208

SPECint\_rate\_base2006 = 174

CPU2006 license: 6

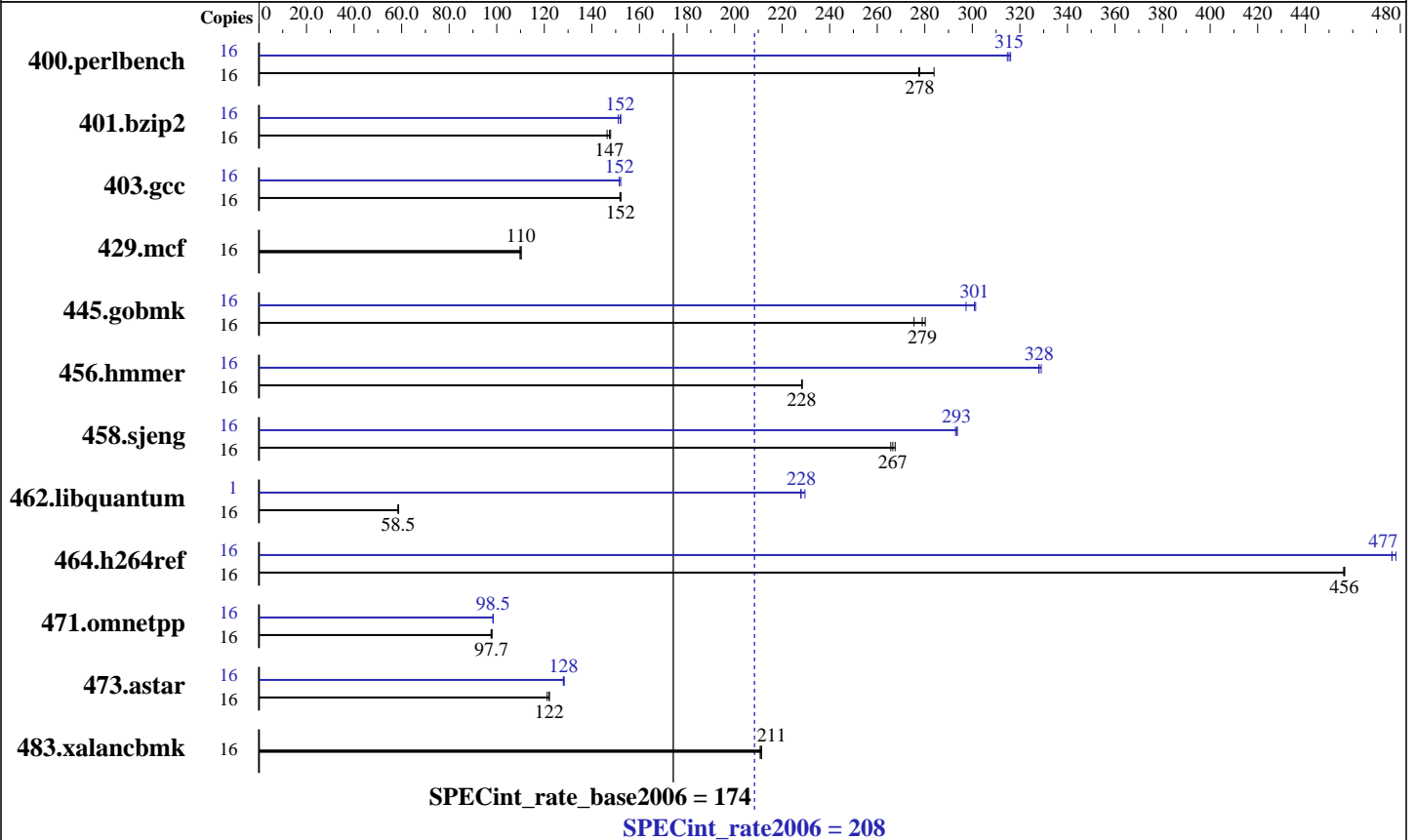
Test sponsor: Sun Microsystems

Tested by: Sun Microsystems

Test date: Oct-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X7350  
 CPU Characteristics: Quad Core, 2.93 GHz  
 CPU MHz: 2933  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip  
 CPU(s) orderable: 2,4 (order by number of chips)  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores  
 L3 Cache: None  
 Other Cache: None  
 Memory: 16 GB (8x2GB DDR2 PC2-5300F 2rank CAS 5-5-5 with ECC)  
 Disk Subsystem: SAS, 73 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	16	551	284	563	277	<b>563</b>	<b>278</b>	16	497	315	494	316	<b>496</b>	<b>315</b>
401.bzip2	16	1055	146	1044	148	<b>1047</b>	<b>147</b>	16	<b>1016</b>	<b>152</b>	1022	151	1015	152
403.gcc	16	848	152	<b>848</b>	<b>152</b>	846	152	16	<b>850</b>	<b>152</b>	847	152	850	151
429.mcf	16	<b>1324</b>	<b>110</b>	1324	110	1329	110	16	<b>1324</b>	<b>110</b>	1324	110	1329	110
445.gobmk	16	599	280	<b>602</b>	<b>279</b>	609	275	16	564	297	<b>558</b>	<b>301</b>	557	301
456.hmmer	16	653	229	654	228	<b>654</b>	<b>228</b>	16	454	329	<b>455</b>	<b>328</b>	455	328
458.sjeng	16	724	268	729	266	<b>726</b>	<b>267</b>	16	661	293	659	294	<b>660</b>	<b>293</b>
462.libquantum	16	5646	58.7	5667	58.5	<b>5665</b>	<b>58.5</b>	1	90.2	230	<b>90.9</b>	<b>228</b>	90.9	228
464.h264ref	16	<b>776</b>	<b>456</b>	776	456	775	457	16	743	476	741	478	<b>743</b>	<b>477</b>
471.omnetpp	16	<b>1023</b>	<b>97.7</b>	1024	97.6	1020	98.0	16	1016	98.4	<b>1016</b>	<b>98.5</b>	1015	98.5
473.astar	16	920	122	<b>921</b>	<b>122</b>	927	121	16	875	128	878	128	<b>876</b>	<b>128</b>
483.xalancbmk	16	524	211	<b>523</b>	<b>211</b>	522	211	16	524	211	<b>523</b>	<b>211</b>	522	211

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 16
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.hmmer 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  
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib  
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include  
456.hmmmer: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/bin/icc  
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/lib  
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux64/include  
C++ benchmarks:  
icpc

## Peak Portability Flags

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

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## Peak Portability Flags (Continued)

483.xalanbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

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

401.bzip2: -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.hmmmer: -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.xalanbmk: basepeak = yes



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## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

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.20090714.02.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.20090714.02.xml>

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

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