



# SPEC<sup>®</sup> CINT2006 Result

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## Sun Microsystems

SPECint<sup>®</sup>\_rate2006 = 255

Sun Fire X2270 (Intel Xeon X5570 2.93GHz)

SPECint\_rate\_base2006 = 238

CPU2006 license: 6

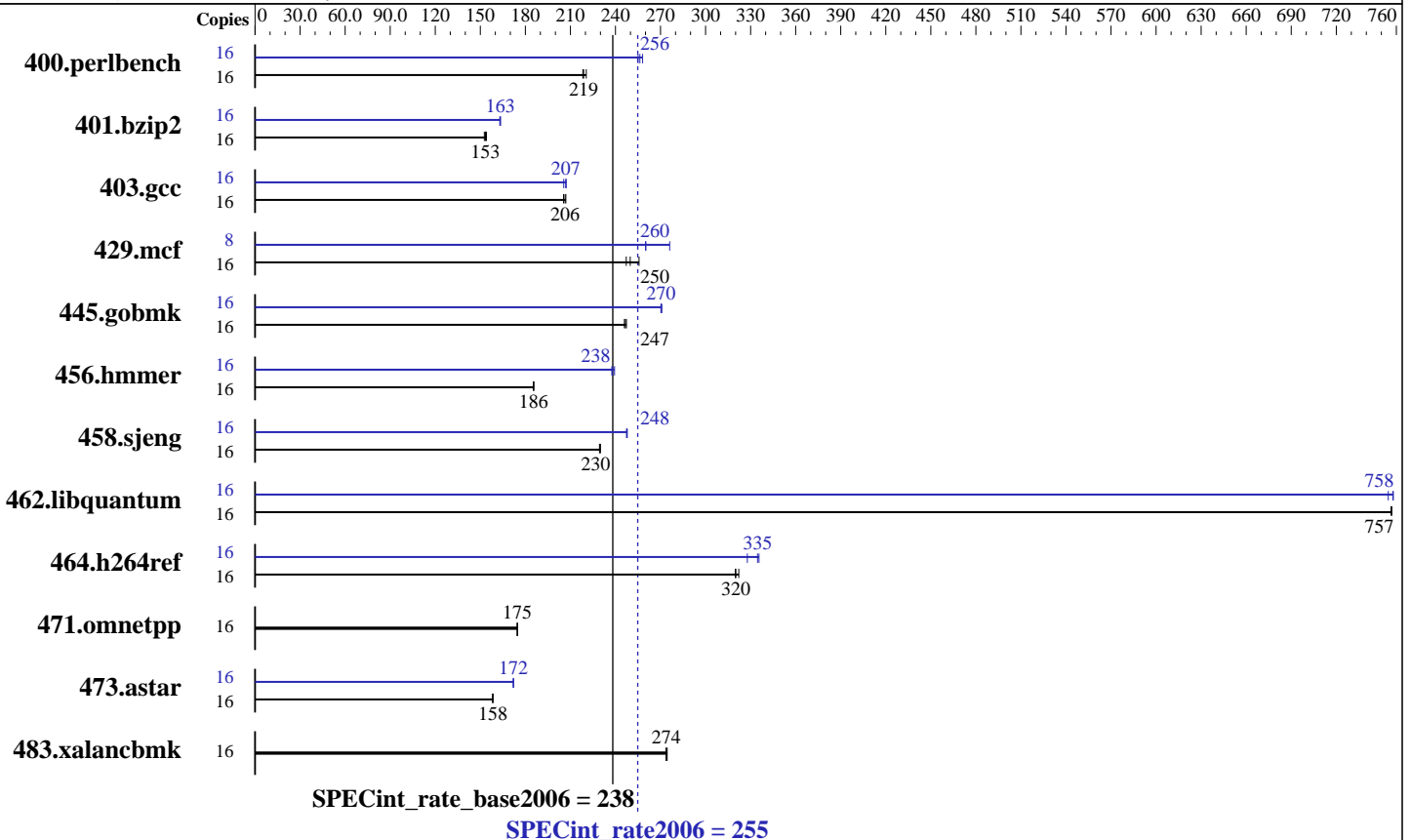
Test sponsor: Sun Microsystems

Tested by: Sun Microsystems

Test date: Mar-2009

Hardware Availability: Apr-2009

Software Availability: Nov-2008



### 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: 1 x 1 TB, SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: SuSe Linux Enterprise Server 10 (x86\_64) SP2, kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: I\_cproc\_p\_11.0.066, I\_cprof\_p\_11.0.066  
 Auto Parallel: No  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V8.1 Binutils 2.18.50



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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	716	218	<b><u>714</u></b>	<b><u>219</u></b>	709	221	16	613	255	606	258	<b><u>610</u></b>	<b><u>256</u></b>
401.bzip2	16	1011	153	1002	154	<b><u>1006</u></b>	<b><u>153</u></b>	16	945	163	947	163	<b><u>945</u></b>	<b><u>163</u></b>
403.gcc	16	<b><u>624</u></b>	<b><u>206</u></b>	627	205	622	207	16	622	207	<b><u>623</u></b>	<b><u>207</u></b>	627	206
429.mcf	16	<b><u>584</u></b>	<b><u>250</u></b>	571	256	590	247	8	<b><u>280</u></b>	<b><u>260</u></b>	281	260	264	276
445.gobmk	16	679	247	<b><u>681</u></b>	<b><u>247</u></b>	682	246	16	620	271	621	270	<b><u>620</u></b>	<b><u>270</u></b>
456.hammer	16	806	185	804	186	<b><u>804</u></b>	<b><u>186</u></b>	16	<b><u>627</u></b>	<b><u>238</u></b>	628	238	624	239
458.sjeng	16	842	230	<b><u>843</u></b>	<b><u>230</u></b>	844	229	16	781	248	<b><u>782</u></b>	<b><u>248</u></b>	783	247
462.libquantum	16	438	757	438	756	<b><u>438</u></b>	<b><u>757</u></b>	16	437	758	<b><u>438</u></b>	<b><u>758</u></b>	439	755
464.h264ref	16	<b><u>1106</u></b>	<b><u>320</u></b>	1099	322	1107	320	16	<b><u>1058</u></b>	<b><u>335</u></b>	1055	336	1080	328
471.omnetpp	16	573	175	573	175	<b><u>573</u></b>	<b><u>175</u></b>	16	573	175	573	175	<b><u>573</u></b>	<b><u>175</u></b>
473.astar	16	709	158	710	158	<b><u>709</u></b>	<b><u>158</u></b>	16	653	172	<b><u>653</u></b>	<b><u>172</u></b>	653	172
483.xalancbmk	16	403	274	<b><u>403</u></b>	<b><u>274</u></b>	402	274	16	403	274	<b><u>403</u></b>	<b><u>274</u></b>	402	274

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

## Submit Notes

The config file option 'submit' was used.  
numactl was used to bind copies to the cores  
"(For details, please see the config file.)"

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

## Platform Notes

Default BIOS settings used.

## 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:

-xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc  
-opt-malloc-options=3 -opt-prefetch

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/spec/cpu2006.1.1/lib -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

401.bzip2: /opt/intel/Compiler/11.0/066/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.0/066/bin/intel64/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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -ansi-alias -opt-prefetch

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

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

429.mcf: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)  
-prof-use(pass 2) -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2  
-ipo -no-prec-div -ansi-alias

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

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

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static  
-opt-malloc-options=3 -opt-prefetch

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

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs  
-L/spec/cpu2006.1.1/lib -lsmartheap

483.xalancbmk: 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-ic11.0-int-linux64-revA.20090710.07.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.20090710.07.xml>

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

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