



# SPEC<sup>®</sup> CINT2006 Result

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## Sun Microsystems

## SPECint<sup>®</sup>\_rate2006 = 213

### Sun Fire X4170 (Intel Xeon E5540 2.53GHz)

## SPECint\_rate\_base2006 = 199

CPU2006 license: 6

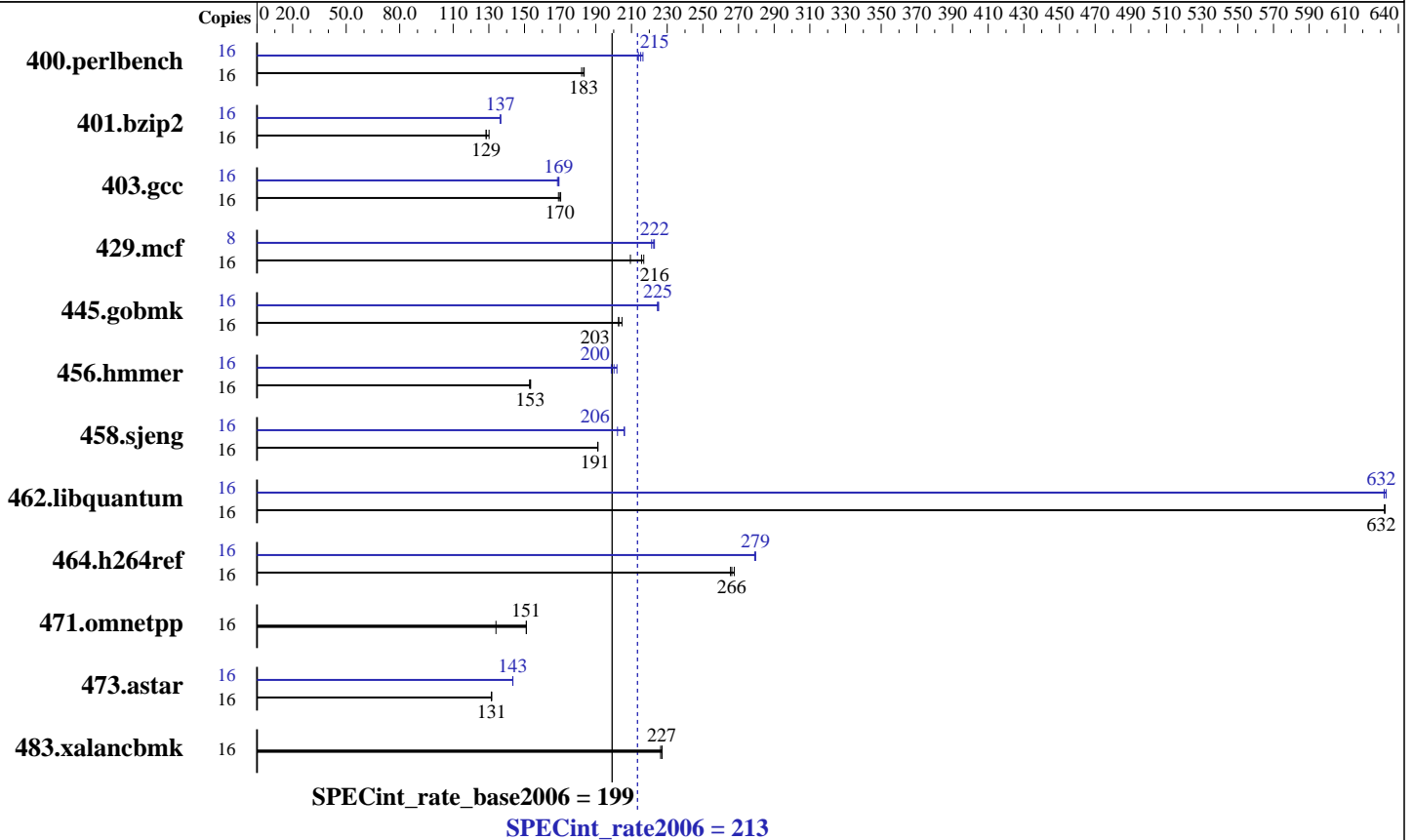
Test date: Aug-2009

Test sponsor: Sun Microsystems

Hardware Availability: Apr-2009

Tested by: Sun Microsystems

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon E5540  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2534  
 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 downclocked to 1066 MHz)  
 Disk Subsystem: 1 x 134 GB, SAS, 10 K 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++ Compiler 11.0 for Linux Build 20080930 Package ID: l\_cproc\_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 2.18.50.0.7.20080502



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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	859	182	852	183	<b>853</b>	<b>183</b>	16	731	214	<b>726</b>	<b>215</b>	722	216
401.bzip2	16	1187	130	<b>1201</b>	<b>129</b>	1202	128	16	<b>1131</b>	<b>137</b>	1131	136	1130	137
403.gcc	16	756	170	<b>758</b>	<b>170</b>	762	169	16	<b>762</b>	<b>169</b>	764	168	761	169
429.mcf	16	697	209	<b>677</b>	<b>216</b>	673	217	8	330	221	<b>328</b>	<b>222</b>	327	223
445.gobmk	16	820	205	828	203	<b>828</b>	<b>203</b>	16	<b>746</b>	<b>225</b>	745	225	747	225
456.hammer	16	977	153	973	153	<b>974</b>	<b>153</b>	16	751	199	740	202	<b>746</b>	<b>200</b>
458.sjeng	16	1013	191	1014	191	<b>1013</b>	<b>191</b>	16	958	202	<b>940</b>	<b>206</b>	939	206
462.libquantum	16	<b>524</b>	<b>632</b>	524	632	524	632	16	525	632	<b>524</b>	<b>632</b>	524	633
464.h264ref	16	<b>1330</b>	<b>266</b>	1334	266	1323	268	16	<b>1267</b>	<b>279</b>	1267	280	1269	279
471.omnetpp	16	<b>662</b>	<b>151</b>	746	134	662	151	16	<b>662</b>	<b>151</b>	746	134	662	151
473.astar	16	854	132	<b>854</b>	<b>131</b>	855	131	16	783	143	783	143	<b>783</b>	<b>143</b>
483.xalancbmk	16	488	226	486	227	<b>486</b>	<b>227</b>	16	488	226	486	227	<b>486</b>	<b>227</b>

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.

## 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

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32

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## Base Portability Flags (Continued)

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-calloc  
-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.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-ic11.0-int-linux64-revA.20090901.00.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.20090901.00.xml>

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

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