



# SPEC<sup>®</sup> CFP2006 Result

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## Sun Microsystems

### SPECfp<sup>®</sup>\_rate2006 = 197

### Sun Blade X6275 (Intel Xeon X5570 2.93GHz)

### SPECfp\_rate\_base2006 = 191

CPU2006 license: 6

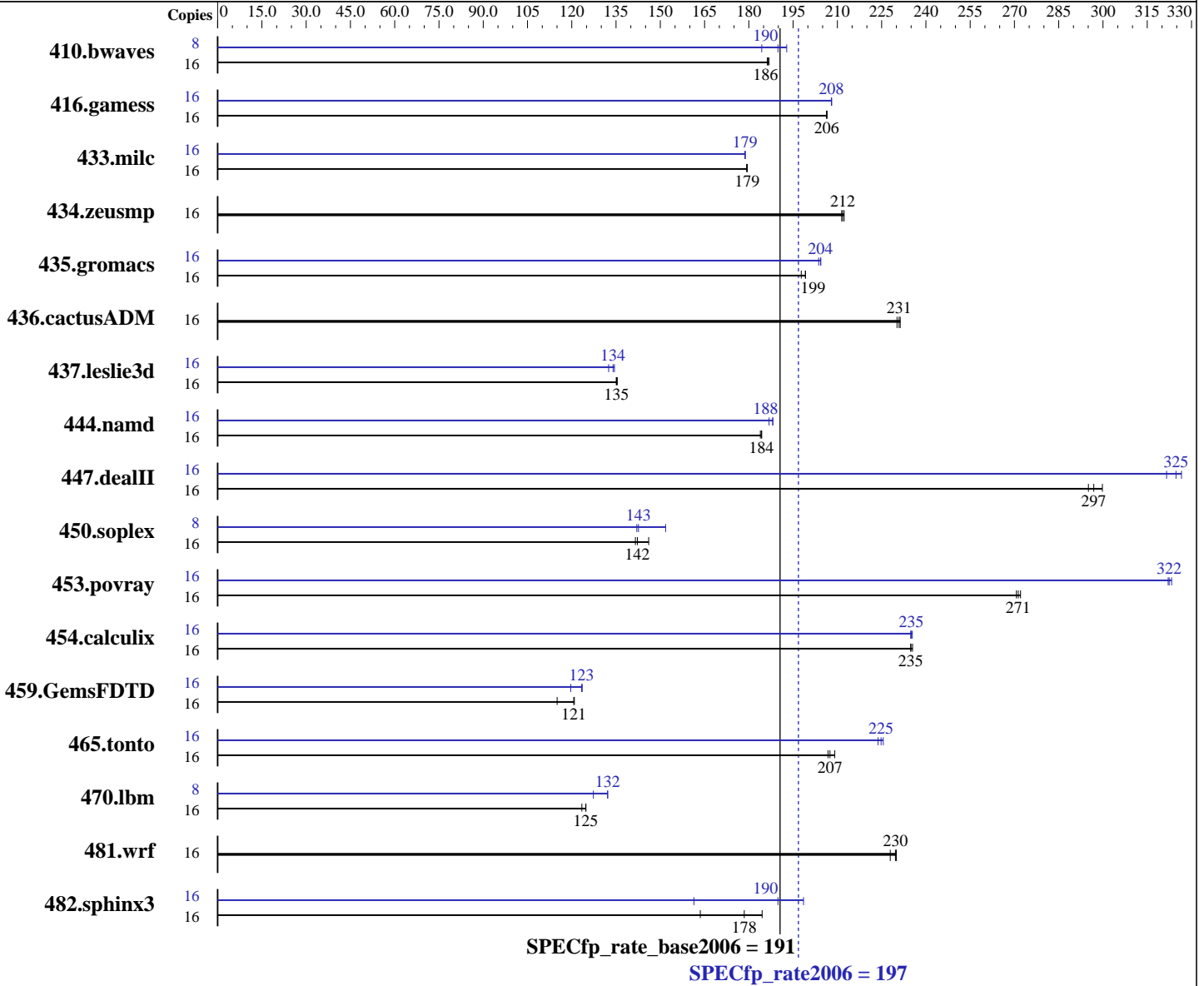
Test sponsor: Sun Microsystems

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

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#### Software

Operating System: SuSe Linux Enterprise Server 10 (x86\_64) SP2, kernel 2.6.16.60-0.21-smpp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: L\_cproc\_p\_11.0.066, L\_cprof\_p\_11.0.066  
 Auto Parallel: No  
 File System: NFSv3  
 System State: Run level 3 (multi-user)  
 (See additional details below)

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 24 GB (6 x 4 GB DDR3-1333)  
Disk Subsystem: 48 x SATA 250 GB 7200 RPM via NFS for SPEC CPU2006  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: Binutils 2.18.50

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	<b><u>1166</u></b>	<b><u>186</u></b>	1164	187	1167	186	8	590	184	<b><u>573</u></b>	<b><u>190</u></b>	564	193
416.gamess	16	1518	206	1517	207	<b><u>1518</u></b>	<b><u>206</u></b>	16	<b><u>1506</u></b>	<b><u>208</u></b>	1506	208	1506	208
433.milc	16	818	180	<b><u>818</u></b>	<b><u>179</u></b>	820	179	16	822	179	<b><u>822</u></b>	<b><u>179</u></b>	822	179
434.zeusmp	16	686	212	689	211	<b><u>688</u></b>	<b><u>212</u></b>	16	686	212	689	211	<b><u>688</u></b>	<b><u>212</u></b>
435.gromacs	16	578	198	574	199	<b><u>574</u></b>	<b><u>199</u></b>	16	559	204	<b><u>559</u></b>	<b><u>204</u></b>	561	204
436.cactusADM	16	831	230	<b><u>828</u></b>	<b><u>231</u></b>	827	231	16	831	230	<b><u>828</u></b>	<b><u>231</u></b>	827	231
437.leslie3d	16	1111	135	1114	135	<b><u>1113</u></b>	<b><u>135</u></b>	16	1135	132	1119	134	<b><u>1122</u></b>	<b><u>134</u></b>
444.namd	16	<b><u>696</u></b>	<b><u>184</u></b>	698	184	696	184	16	687	187	<b><u>682</u></b>	<b><u>188</u></b>	682	188
447.dealII	16	620	295	<b><u>617</u></b>	<b><u>297</u></b>	611	300	16	560	327	<b><u>564</u></b>	<b><u>325</u></b>	569	322
450.soplex	16	<b><u>938</u></b>	<b><u>142</u></b>	943	142	914	146	8	470	142	<b><u>468</u></b>	<b><u>143</u></b>	440	152
453.povray	16	<b><u>314</u></b>	<b><u>271</u></b>	313	272	315	271	16	<b><u>264</u></b>	<b><u>322</u></b>	264	322	263	323
454.calculix	16	<b><u>562</u></b>	<b><u>235</u></b>	561	235	562	235	16	562	235	561	235	<b><u>562</u></b>	<b><u>235</u></b>
459.GemsFDTD	16	1476	115	1404	121	<b><u>1407</u></b>	<b><u>121</u></b>	16	1419	120	<b><u>1377</u></b>	<b><u>123</u></b>	1374	124
465.tonto	16	753	209	<b><u>759</u></b>	<b><u>207</u></b>	761	207	16	<b><u>700</u></b>	<b><u>225</u></b>	704	224	698	226
470.lbm	16	1781	123	<b><u>1763</u></b>	<b><u>125</u></b>	1761	125	8	832	132	863	127	<b><u>832</u></b>	<b><u>132</u></b>
481.wrf	16	784	228	<b><u>778</u></b>	<b><u>230</u></b>	777	230	16	784	228	<b><u>778</u></b>	<b><u>230</u></b>	777	230
482.sphinx3	16	<b><u>1748</u></b>	<b><u>178</u></b>	1690	185	1907	164	16	1932	161	1571	199	<b><u>1642</u></b>	<b><u>190</u></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  
"(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.



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## General Notes

NFS for file system: NFS server, Sun Fire X4540 equipped with 48 x 250GB SATA 7200 RPM, serves the client over Gigabit ethernet connection.

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64  
 416.gamess: -DSPEC\_CPU\_LP64  
 433.milc: -DSPEC\_CPU\_LP64  
 434.zeusmp: -DSPEC\_CPU\_LP64  
 435.gromacs: -DSPEC\_CPU\_LP64 -nofor\_main  
 436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
 437.leslie3d: -DSPEC\_CPU\_LP64  
 444.namd: -DSPEC\_CPU\_LP64  
 447.dealII: -DSPEC\_CPU\_LP64  
 450.soplex: -DSPEC\_CPU\_LP64  
 453.povray: -DSPEC\_CPU\_LP64  
 454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
 459.GemsFDTD: -DSPEC\_CPU\_LP64  
 465.tonto: -DSPEC\_CPU\_LP64  
 470.lbm: -DSPEC\_CPU\_LP64  
 481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX  
 482.sphinx3: -DSPEC\_CPU\_LP64

## Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

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## Base Optimization Flags (Continued)

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: ifort -m32

Benchmarks using both Fortran and C:

icc ifort

## Peak Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64  
 416.gamess: -DSPEC\_CPU\_LP64  
 433.milc: -DSPEC\_CPU\_LP64  
 434.zeusmp: -DSPEC\_CPU\_LP64  
 435.gromacs: -DSPEC\_CPU\_LP64 -nofor\_main  
 436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
 444.namd: -DSPEC\_CPU\_LP64  
 447.dealII: -DSPEC\_CPU\_LP64  
 453.povray: -DSPEC\_CPU\_LP64  
 454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
 459.GemsFDTD: -DSPEC\_CPU\_LP64  
 465.tonto: -DSPEC\_CPU\_LP64  
 470.lbm: -DSPEC\_CPU\_LP64  
 481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX



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## Peak Optimization Flags

C benchmarks:

433.milc: -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)  
-fno-alias

470.lbm: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -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)  
-fno-alias -auto-ilp32

447.dealII: -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 -scalar-rep-

450.soplex: -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-malloc-options=3

453.povray: -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 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -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 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -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-malloc-options=3 -opt-prefetch

459.GemsFDTD: -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 -Ob0 -opt-prefetch

465.tonto: -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 -auto

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## Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -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 -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.09.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.09.xml>

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

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