



# SPEC® CFP2006 Result

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## Intel Corporation

SPECfp®2006 = 57.1

Intel DH67BLB3 Motherboard (Intel Core i7-2600K)

SPECfp\_base2006 = 55.2

CPU2006 license: 13

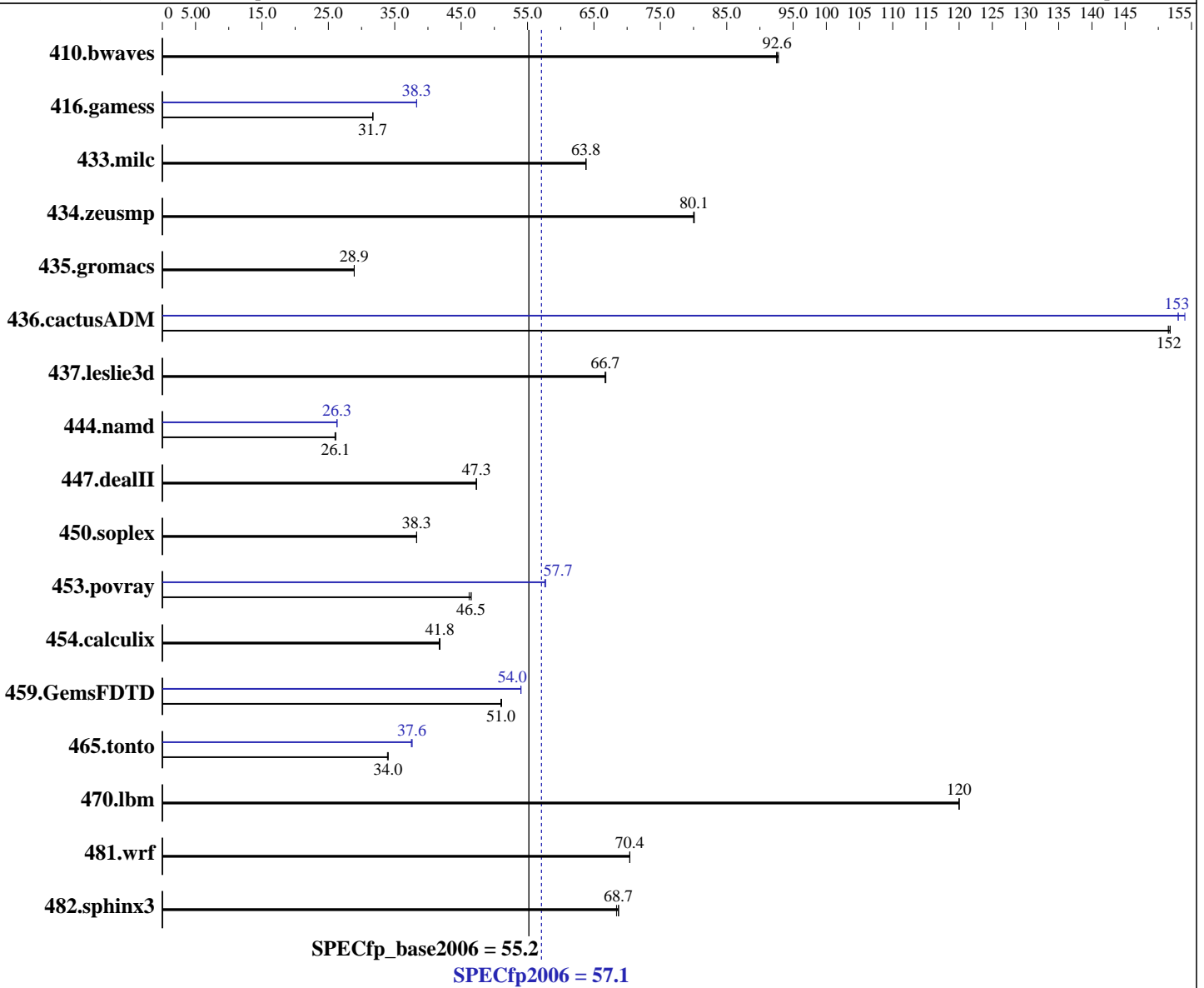
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jul-2011

Hardware Availability: Mar-2011

Software Availability: Apr-2011



**Hardware**

CPU Name: Intel Core i7-2600K  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.8 GHz  
 CPU MHz: 3400  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 chip  
 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: Windows 7 Ultimate (64-bit)  
 Compiler: Intel C++ Compiler XE for Intel 64  
 Version 12.0.3.176 Build 20110309  
 Intel Visual Fortran Compiler XE for Intel 64  
 Version 12.0.3.176 Build 20110309  
 Microsoft Visual Studio 2008 Professional SP1  
 (for libraries)  
 Auto Parallel: Yes  
 File System: NTFS

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L3 Cache: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600U-9)  
 Disk Subsystem: Seagate 1 TB HDD, 7200 rpm  
 Other Hardware: None

System State: Default  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap Library Version 9.01 from <http://www.microquill.com/>

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b>147</b>	<b>92.6</b>	146	92.8	147	92.5	<b>147</b>	<b>92.6</b>	146	92.8	147	92.5
416.gamess	618	31.7	618	31.7	<b>618</b>	<b>31.7</b>	511	38.3	<b>511</b>	<b>38.3</b>	511	38.3
433.milc	144	63.8	<b>144</b>	<b>63.8</b>	144	63.8	144	63.8	<b>144</b>	<b>63.8</b>	144	63.8
434.zeusmp	114	80.1	<b>114</b>	<b>80.1</b>	114	80.0	114	80.1	<b>114</b>	<b>80.1</b>	114	80.0
435.gromacs	247	28.9	<b>247</b>	<b>28.9</b>	247	28.9	247	28.9	<b>247</b>	<b>28.9</b>	247	28.9
436.cactusADM	<b>78.8</b>	<b>152</b>	78.7	152	78.9	152	77.6	154	<b>78.1</b>	<b>153</b>	78.1	153
437.leslie3d	<b>141</b>	<b>66.7</b>	141	66.8	141	66.7	<b>141</b>	<b>66.7</b>	141	66.8	141	66.7
444.namd	308	26.1	308	26.0	<b>308</b>	<b>26.1</b>	305	26.3	305	26.3	<b>305</b>	<b>26.3</b>
447.dealII	242	47.3	242	47.3	<b>242</b>	<b>47.3</b>	242	47.3	242	47.3	<b>242</b>	<b>47.3</b>
450.soplex	<b>218</b>	<b>38.3</b>	218	38.3	218	38.3	<b>218</b>	<b>38.3</b>	218	38.3	218	38.3
453.povray	115	46.2	<b>114</b>	<b>46.5</b>	114	46.5	92.2	57.7	92.3	57.6	<b>92.2</b>	<b>57.7</b>
454.calculix	198	41.8	198	41.7	<b>198</b>	<b>41.8</b>	198	41.8	198	41.7	<b>198</b>	<b>41.8</b>
459.GemsFDTD	208	51.1	<b>208</b>	<b>51.0</b>	208	51.0	196	54.0	<b>196</b>	<b>54.0</b>	197	54.0
465.tonto	<b>290</b>	<b>34.0</b>	290	33.9	289	34.0	262	37.6	<b>262</b>	<b>37.6</b>	262	37.5
470.lbm	115	120	<b>115</b>	<b>120</b>	115	120	115	120	<b>115</b>	<b>120</b>	115	120
481.wrf	159	70.4	<b>159</b>	<b>70.4</b>	159	70.4	159	70.4	<b>159</b>	<b>70.4</b>	159	70.4
482.sphinx3	<b>284</b>	<b>68.7</b>	284	68.7	285	68.4	<b>284</b>	<b>68.7</b>	284	68.7	285	68.4

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

## General Notes

Tested systems can be used with Shin-G ATX case,  
 PC Power and Cooling 1200W power supply  
 OMP\_NUM\_THREADS set to number of processors cores  
 KMP\_AFFINITY set to granularity=fine,scatter

## Base Compiler Invocation

C benchmarks:  
 icl -Qvc9 -Qstd=c99

C++ benchmarks:  
 icl -Qvc9

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## Base Compiler Invocation (Continued)

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc9 -Qstd=c99 ifort

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_P64 -names:lowercase  
 416.gamess: -DSPEC\_CPU\_P64  
 433.milc: -DSPEC\_CPU\_P64  
 434.zeusmp: -DSPEC\_CPU\_P64  
 435.gromacs: -DSPEC\_CPU\_P64  
 436.cactusADM: -DSPEC\_CPU\_P64 -names:lowercase /assume:underscore  
 437.leslie3d: -DSPEC\_CPU\_P64  
 444.namd: -DSPEC\_CPU\_P64 /TP  
 447.dealII: -DSPEC\_CPU\_P64 -DDEAL\_II\_MEMBER\_VAR\_SPECIALIZATION\_BUG  
 450.soplex: -DSPEC\_CPU\_P64  
 453.povray: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_WINDOWS\_ICL  
 454.calculix: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_NOZMODIFIER -names:lowercase  
 459.GemsFDTD: -DSPEC\_CPU\_P64  
 465.tonto: -DSPEC\_CPU\_P64  
 470.lbm: -DSPEC\_CPU\_P64  
 481.wrf: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_WINDOWS\_ICL  
 482.sphinx3: -DSPEC\_CPU\_P64

## Base Optimization Flags

C benchmarks:

-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch  
-Qauto-ilp32 /F1000000000

C++ benchmarks:

-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch  
-Qcxx-features -Qauto-ilp32 /F1000000000 shlw64M.lib  
-link /FORCE:MULTIPLE

Fortran benchmarks:

-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch  
/F1000000000

Benchmarks using both Fortran and C:

-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch  
-Qauto-ilp32 /F1000000000



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## Peak Compiler Invocation

C benchmarks:

icl -Qvc9 -Qstd=c99

C++ benchmarks:

icl -Qvc9

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc9 -Qstd=c99 ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -QxAVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000 sh1W64M.lib  
-link /FORCE:MULTIPLE

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -QxAVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32  
/F1000000000 sh1W64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -QxAVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep-  
/F1000000000

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## Peak Optimization Flags (Continued)

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -QxAVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qparallel  
/F1000000000

465.tonto: -QxAVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qunroll4 -Qauto -Qinline-calloc  
/F1000000000

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: -QxAVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qunroll2  
-Qauto-ilp32 /F1000000000

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.html>

<http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.xml>

<http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.xml>

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

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