



# SPEC® CFP2006 Result

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## Intel Corporation

**SPECfp®2006 = 56.9**

Intel DH67BLB3 Motherboard (Intel Core i7-2600K)

**SPECfp\_base2006 = 55.0**

CPU2006 license: 13

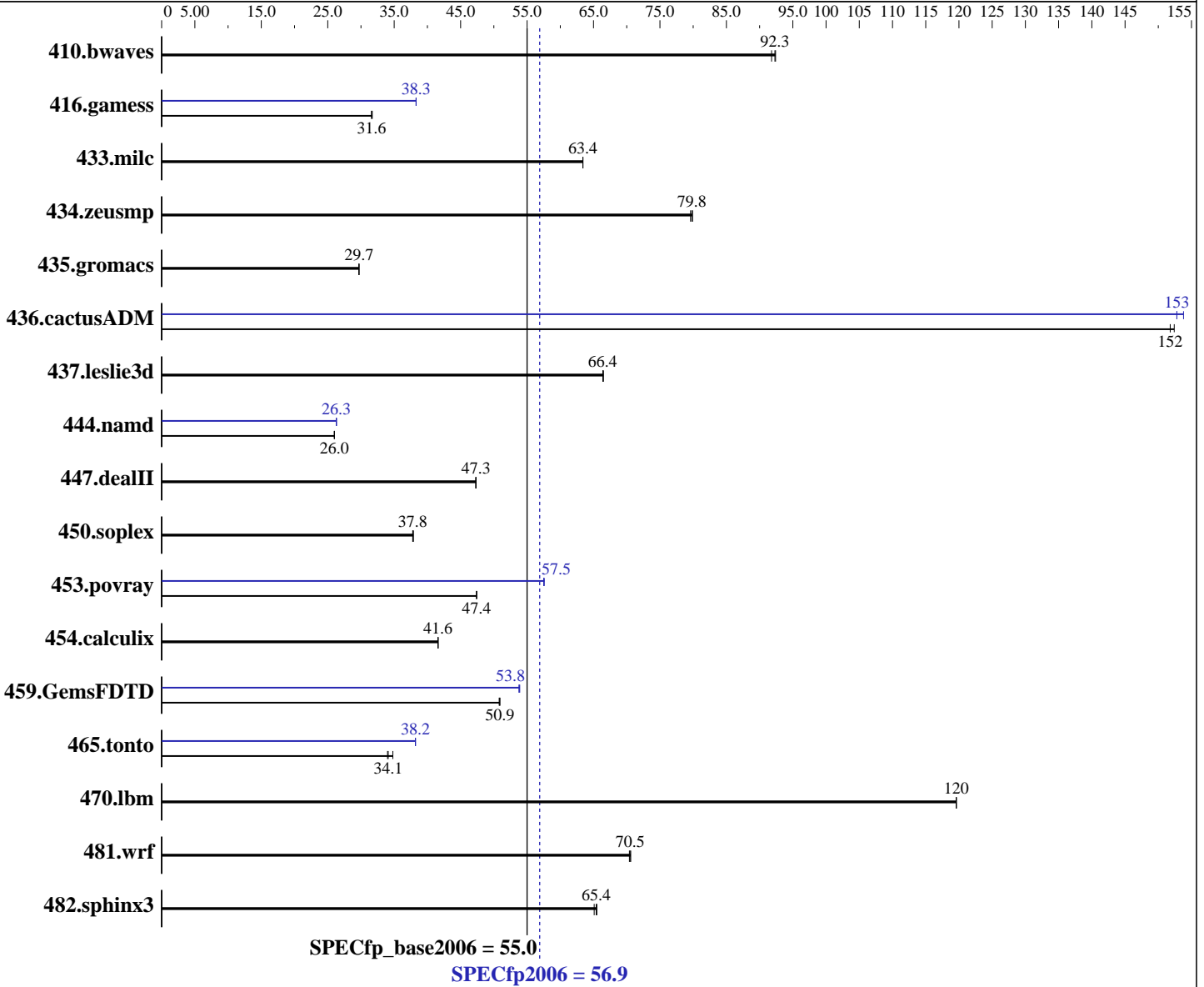
Test date: Apr-2011

Test sponsor: Intel Corporation

Hardware Availability: Mar-2011

Tested by: Intel Corporation

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 Intel64  
 Version 12.0.3.163 Build 20110217  
 Intel Visual Fortran Compiler XE for Intel64  
 Version 12.0.3.163 Build 20110217  
 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 SATA, 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><u>147</u></b>	<b><u>92.3</u></b>	148	91.8	147	92.4	<b><u>147</u></b>	<b><u>92.3</u></b>	148	91.8	147	92.4
416.gamess	618	31.7	<b><u>619</u></b>	<b><u>31.6</u></b>	619	31.6	<b><u>512</u></b>	<b><u>38.3</u></b>	512	38.3	512	38.3
433.milc	145	63.4	<b><u>145</u></b>	<b><u>63.4</u></b>	145	63.4	145	63.4	<b><u>145</u></b>	<b><u>63.4</u></b>	145	63.4
434.zeusmp	114	79.9	<b><u>114</u></b>	<b><u>79.8</u></b>	114	79.6	114	79.9	<b><u>114</u></b>	<b><u>79.8</u></b>	114	79.6
435.gromacs	241	29.7	241	29.7	<b><u>241</u></b>	<b><u>29.7</u></b>	241	29.7	241	29.7	<b><u>241</u></b>	<b><u>29.7</u></b>
436.cactusADM	<b><u>78.7</u></b>	<b><u>152</u></b>	78.7	152	78.4	152	<b><u>78.2</u></b>	<b><u>153</u></b>	78.2	153	77.7	154
437.leslie3d	<b><u>142</u></b>	<b><u>66.4</u></b>	141	66.5	142	66.4	<b><u>142</u></b>	<b><u>66.4</u></b>	141	66.5	142	66.4
444.namd	308	26.0	<b><u>308</u></b>	<b><u>26.0</u></b>	308	26.0	<b><u>305</u></b>	<b><u>26.3</u></b>	305	26.3	305	26.3
447.dealII	<b><u>242</u></b>	<b><u>47.3</u></b>	242	47.3	242	47.3	<b><u>242</u></b>	<b><u>47.3</u></b>	242	47.3	242	47.3
450.soplex	220	37.9	<b><u>221</u></b>	<b><u>37.8</u></b>	221	37.8	220	37.9	<b><u>221</u></b>	<b><u>37.8</u></b>	221	37.8
453.povray	<b><u>112</u></b>	<b><u>47.4</u></b>	112	47.4	112	47.4	<b><u>92.5</u></b>	<b><u>57.5</u></b>	92.5	57.5	92.4	57.6
454.calculix	198	41.6	<b><u>198</u></b>	<b><u>41.6</u></b>	198	41.6	198	41.6	<b><u>198</u></b>	<b><u>41.6</u></b>	198	41.6
459.GemsFDTD	209	50.9	<b><u>209</u></b>	<b><u>50.9</u></b>	209	50.8	<b><u>197</u></b>	<b><u>53.8</u></b>	197	53.8	197	53.9
465.tonto	289	34.0	283	34.8	<b><u>289</u></b>	<b><u>34.1</u></b>	257	38.2	<b><u>257</u></b>	<b><u>38.2</u></b>	257	38.2
470.lbm	115	120	<b><u>115</u></b>	<b><u>120</u></b>	115	120	115	120	<b><u>115</u></b>	<b><u>120</u></b>	115	120
481.wrf	158	70.6	<b><u>158</u></b>	<b><u>70.5</u></b>	159	70.4	158	70.6	<b><u>158</u></b>	<b><u>70.5</u></b>	159	70.4
482.sphinx3	297	65.5	299	65.1	<b><u>298</u></b>	<b><u>65.4</u></b>	297	65.5	299	65.1	<b><u>298</u></b>	<b><u>65.4</u></b>

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.dealII: 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-revB.html>

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

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

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

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

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

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