



# SPEC® CFP2006 Result

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## Intel Corporation

SPECfp®2006 = **52.5**

Intel DH67BLB3 Motherboard (Intel Core i5-2400)

SPECfp\_base2006 = **50.9**

CPU2006 license: 13

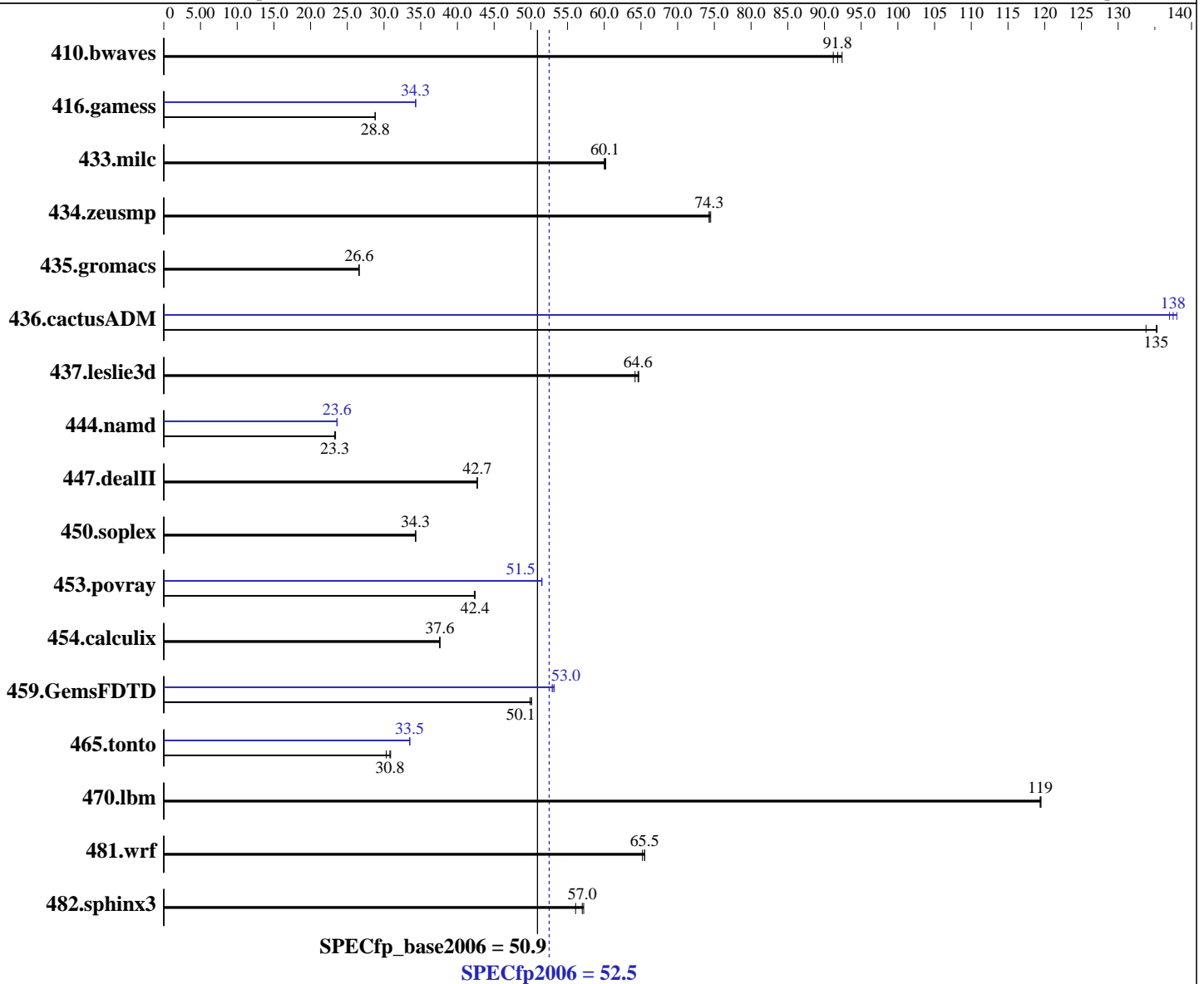
Test date: Apr-2011

Test sponsor: Intel Corporation

Hardware Availability: Mar-2011

Tested by: Intel Corporation

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Core i5-2400  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.4 GHz  
 CPU MHz: 3100  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 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 12.0.0.104 Build 20101006  
 Microsoft Visual Studio 2008 Professional SP1  
 (for libraries)  
 Auto Parallel: Yes  
 File System: NTFS

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L3 Cache: 6 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	149	91.2	<b>148</b>	<b>91.8</b>	147	92.4	149	91.2	<b>148</b>	<b>91.8</b>	147	92.4
416.gamess	680	28.8	680	28.8	<b>680</b>	<b>28.8</b>	570	34.3	<b>570</b>	<b>34.3</b>	570	34.3
433.milc	153	60.2	<b>153</b>	<b>60.1</b>	153	60.0	153	60.2	<b>153</b>	<b>60.1</b>	153	60.0
434.zeusmp	123	74.3	122	74.5	<b>122</b>	<b>74.3</b>	123	74.3	122	74.5	<b>122</b>	<b>74.3</b>
435.gromacs	268	26.6	<b>268</b>	<b>26.6</b>	268	26.6	268	26.6	<b>268</b>	<b>26.6</b>	268	26.6
436.cactusADM	88.3	135	89.3	134	<b>88.4</b>	<b>135</b>	86.6	138	<b>86.9</b>	<b>138</b>	87.2	137
437.leslie3d	145	64.7	<b>146</b>	<b>64.6</b>	146	64.2	145	64.7	<b>146</b>	<b>64.6</b>	146	64.2
444.namd	343	23.4	<b>344</b>	<b>23.3</b>	344	23.3	340	23.6	<b>340</b>	<b>23.6</b>	340	23.6
447.dealII	268	42.7	268	42.7	<b>268</b>	<b>42.7</b>	268	42.7	268	42.7	<b>268</b>	<b>42.7</b>
450.soplex	243	34.3	<b>244</b>	<b>34.3</b>	244	34.3	243	34.3	<b>244</b>	<b>34.3</b>	244	34.3
453.povray	126	42.3	126	42.4	<b>126</b>	<b>42.4</b>	103	51.5	<b>103</b>	<b>51.5</b>	103	51.5
454.calculix	219	37.6	<b>220</b>	<b>37.6</b>	220	37.6	219	37.6	<b>220</b>	<b>37.6</b>	220	37.6
459.GemsFDTD	213	49.9	<b>212</b>	<b>50.1</b>	212	50.1	201	52.9	199	53.2	<b>200</b>	<b>53.0</b>
465.tonto	318	30.9	325	30.3	<b>319</b>	<b>30.8</b>	293	33.5	<b>293</b>	<b>33.5</b>	293	33.5
470.lbm	115	120	<b>115</b>	<b>119</b>	115	119	115	120	<b>115</b>	<b>119</b>	115	119
481.wrf	171	65.2	171	65.5	<b>171</b>	<b>65.5</b>	171	65.2	171	65.5	<b>171</b>	<b>65.5</b>
482.sphinx3	341	57.2	347	56.1	<b>342</b>	<b>57.0</b>	341	57.2	347	56.1	<b>342</b>	<b>57.0</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.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-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 questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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