



# SPEC<sup>®</sup> CFP2006 Result

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## Intel Corporation

SPECfp<sup>®</sup>2006 = **35.8**

Intel DH57JG Motherboard (Intel Core i5-680)

SPECfp\_base2006 = **34.8**

CPU2006 license: 13

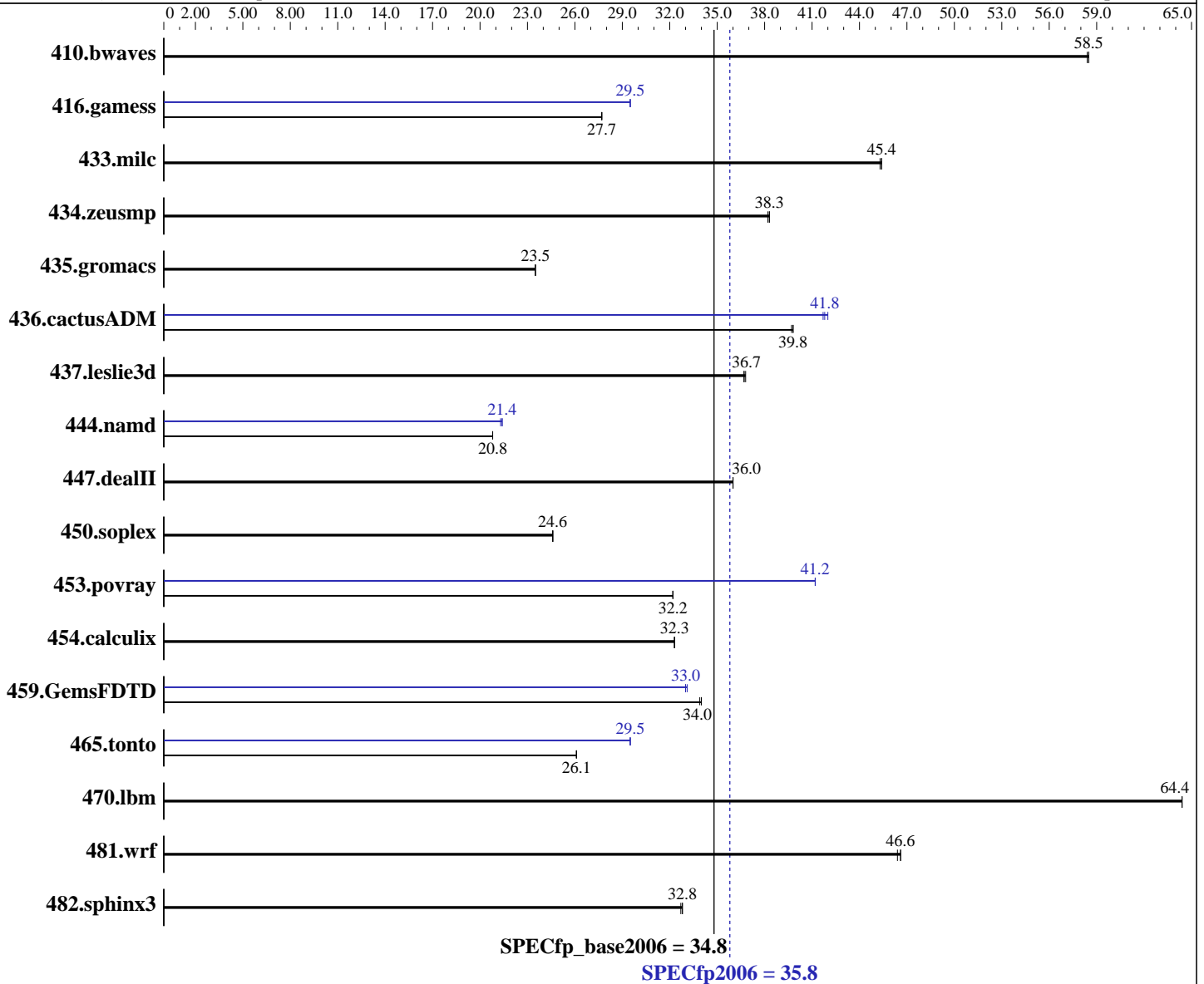
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jul-2011

Hardware Availability: Apr-2010

Software Availability: Apr-2011



| Hardware             |   |
|----------------------|---|
| CPU Name:            | Intel Core i5-680                             |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.86 GHz   |
| CPU MHz:             | 3600  |
| FPU:                 | Integrated                                    |
| CPU(s) enabled:      | 2 cores, 1 chip, 2 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                   |

| Software          |   |
|-------------------|---|
| Operating System: | Windows 7 Ultimate (64-bit)   |
| Compiler:         | Intel C++ Compiler XE for Intel64<br>Version 12.0.3.176 Build 20110309<br>Intel Visual Fortran Compiler XE for Intel64<br>Version 12.0.3.176 Build 20110309<br>Microsoft Visual Studio 2008 Professional SP1<br>(for libraries) |
| Auto Parallel:    | Yes   |
| File System:      | NTFS  |

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L3 Cache: 4 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 4 GB (2 x 2 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>233</u></b> | <b><u>58.5</u></b> | 232               | 58.5               | 233               | 58.4               | <b><u>233</u></b> | <b><u>58.5</u></b> | 232               | 58.5               | 233               | 58.4               |
| 416.gamess    | 706               | 27.7               | 706               | 27.7               | <b><u>706</u></b> | <b><u>27.7</u></b> | <b><u>664</u></b> | <b><u>29.5</u></b> | 663               | 29.5               | 664               | 29.5               |
| 433.milc      | 203               | 45.3               | 202               | 45.4               | <b><u>202</u></b> | <b><u>45.4</u></b> | 203               | 45.3               | 202               | 45.4               | <b><u>202</u></b> | <b><u>45.4</u></b> |
| 434.zeusmp    | <b><u>238</u></b> | <b><u>38.3</u></b> | 237               | 38.3               | 238               | 38.2               | <b><u>238</u></b> | <b><u>38.3</u></b> | 237               | 38.3               | 238               | 38.2               |
| 435.gromacs   | 304               | 23.5               | <b><u>304</u></b> | <b><u>23.5</u></b> | 304               | 23.5               | 304               | 23.5               | <b><u>304</u></b> | <b><u>23.5</u></b> | 304               | 23.5               |
| 436.cactusADM | 300               | 39.8               | 301               | 39.7               | <b><u>301</u></b> | <b><u>39.8</u></b> | <b><u>286</u></b> | <b><u>41.8</u></b> | 285               | 42.0               | 287               | 41.7               |
| 437.leslie3d  | <b><u>256</u></b> | <b><u>36.7</u></b> | 256               | 36.7               | 256               | 36.8               | <b><u>256</u></b> | <b><u>36.7</u></b> | 256               | 36.7               | 256               | 36.8               |
| 444.namd      | 385               | 20.8               | <b><u>385</u></b> | <b><u>20.8</u></b> | 385               | 20.8               | <b><u>375</u></b> | <b><u>21.4</u></b> | 376               | 21.3               | 375               | 21.4               |
| 447.dealII    | 318               | 36.0               | 317               | 36.0               | <b><u>318</u></b> | <b><u>36.0</u></b> | 318               | 36.0               | 317               | 36.0               | <b><u>318</u></b> | <b><u>36.0</u></b> |
| 450.soplex    | 340               | 24.6               | <b><u>340</u></b> | <b><u>24.6</u></b> | 339               | 24.6               | 340               | 24.6               | <b><u>340</u></b> | <b><u>24.6</u></b> | 339               | 24.6               |
| 453.povray    | 165               | 32.2               | <b><u>165</u></b> | <b><u>32.2</u></b> | 165               | 32.2               | 129               | 41.2               | <b><u>129</u></b> | <b><u>41.2</u></b> | 129               | 41.2               |
| 454.calculix  | 255               | 32.3               | <b><u>256</u></b> | <b><u>32.3</u></b> | 256               | 32.3               | 255               | 32.3               | <b><u>256</u></b> | <b><u>32.3</u></b> | 256               | 32.3               |
| 459.GemsFDTD  | <b><u>312</u></b> | <b><u>34.0</u></b> | 313               | 33.9               | 312               | 34.0               | <b><u>321</u></b> | <b><u>33.0</u></b> | 322               | 33.0               | 321               | 33.1               |
| 465.tonto     | <b><u>377</u></b> | <b><u>26.1</u></b> | 376               | 26.1               | 377               | 26.1               | 334               | 29.5               | <b><u>334</u></b> | <b><u>29.5</u></b> | 334               | 29.5               |
| 470.lbm       | 214               | 64.4               | 213               | 64.4               | <b><u>213</u></b> | <b><u>64.4</u></b> | 214               | 64.4               | 213               | 64.4               | <b><u>213</u></b> | <b><u>64.4</u></b> |
| 481.wrf       | 240               | 46.6               | <b><u>240</u></b> | <b><u>46.6</u></b> | 241               | 46.4               | 240               | 46.6               | <b><u>240</u></b> | <b><u>46.6</u></b> | 241               | 46.4               |
| 482.sphinx3   | <b><u>595</u></b> | <b><u>32.8</u></b> | 595               | 32.8               | 597               | 32.7               | <b><u>595</u></b> | <b><u>32.8</u></b> | 595               | 32.8               | 597               | 32.7               |

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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Software Availability: Apr-2011

## 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:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias  
-Qopt-prefetch -Qauto-ilp32 /F1000000000

C++ benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias  
-Qopt-prefetch -Qcxx-features -Qauto-ilp32 /F1000000000 shlw64M.lib  
-link /FORCE:MULTIPLE

Fortran benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias  
-Qopt-prefetch /F1000000000

Benchmarks using both Fortran and C:

-QxSSE4.2 -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: -QxSSE4.2(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: -QxSSE4.2(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: -QxSSE4.2(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: -QxSSE4.2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qparallel  
/F1000000000

465.tonto: -QxSSE4.2(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: -QxSSE4.2(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).

Tested with SPEC CPU2006 v1.1.

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