



SPEC[®] CFP2006 Result

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Intel Corporation

SPECfp[®]2006 = 39.9

Intel DH67BLB3 Motherboard (Intel Pentium G850)

SPECfp_base2006 = 38.9

CPU2006 license: 13

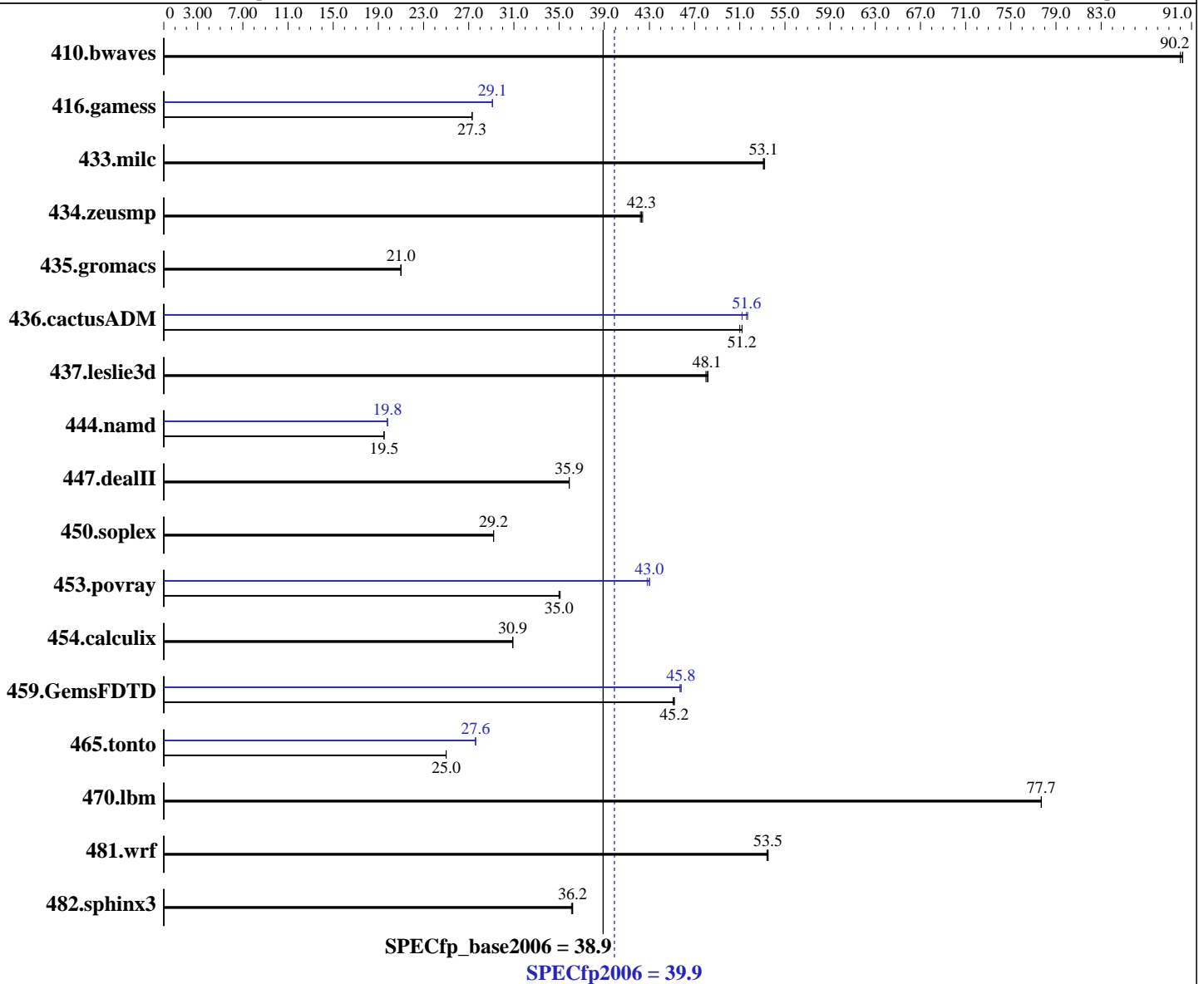
Test date: Jul-2011

Test sponsor: Intel Corporation

Hardware Availability: May-2011

Tested by: Intel Corporation

Software Availability: Apr-2011



Hardware

CPU Name: Intel Pentium G850
 CPU Characteristics:
 CPU MHz: 2900
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 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 12.0.3.176 Build 20110309
 Intel Visual Fortran Compiler XE for Intel64
 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: 3 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 | 151 | 90.0 | 151 | 90.2 | <u>151</u> | <u>90.2</u> | 151 | 90.0 | 151 | 90.2 | <u>151</u> | <u>90.2</u> |
| 416.gamess | 718 | 27.3 | 718 | 27.3 | <u>718</u> | <u>27.3</u> | 673 | 29.1 | <u>673</u> | <u>29.1</u> | 673 | 29.1 |
| 433.milc | <u>173</u> | <u>53.1</u> | 173 | 53.2 | 173 | 53.1 | <u>173</u> | <u>53.1</u> | 173 | 53.2 | 173 | 53.1 |
| 434.zeusmp | 216 | 42.2 | 215 | 42.4 | <u>215</u> | <u>42.3</u> | 216 | 42.2 | 215 | 42.4 | <u>215</u> | <u>42.3</u> |
| 435.gromacs | 340 | 21.0 | <u>340</u> | <u>21.0</u> | 340 | 21.0 | 340 | 21.0 | <u>340</u> | <u>21.0</u> | 340 | 21.0 |
| 436.cactusADM | <u>234</u> | <u>51.2</u> | 234 | 51.0 | 233 | 51.2 | <u>232</u> | <u>51.6</u> | 234 | 51.2 | 231 | 51.7 |
| 437.leslie3d | <u>196</u> | <u>48.1</u> | 196 | 48.0 | 195 | 48.2 | <u>196</u> | <u>48.1</u> | 196 | 48.0 | 195 | 48.2 |
| 444.namd | 412 | 19.5 | <u>412</u> | <u>19.5</u> | 412 | 19.5 | 405 | 19.8 | <u>405</u> | <u>19.8</u> | 405 | 19.8 |
| 447.dealII | 319 | 35.9 | 319 | 35.9 | <u>319</u> | <u>35.9</u> | 319 | 35.9 | 319 | 35.9 | <u>319</u> | <u>35.9</u> |
| 450.soplex | 286 | 29.2 | <u>286</u> | <u>29.2</u> | 286 | 29.2 | 286 | 29.2 | <u>286</u> | <u>29.2</u> | 286 | 29.2 |
| 453.povray | 152 | 35.0 | <u>152</u> | <u>35.0</u> | 152 | 35.1 | 124 | 43.0 | 124 | 42.8 | <u>124</u> | <u>43.0</u> |
| 454.calculix | 267 | 30.9 | <u>267</u> | <u>30.9</u> | 267 | 30.9 | 267 | 30.9 | <u>267</u> | <u>30.9</u> | 267 | 30.9 |
| 459.GemsFDTD | <u>235</u> | <u>45.2</u> | 235 | 45.1 | 235 | 45.2 | <u>232</u> | <u>45.8</u> | 232 | 45.7 | 232 | 45.8 |
| 465.tonto | 394 | 25.0 | 393 | 25.0 | <u>393</u> | <u>25.0</u> | 357 | 27.6 | <u>357</u> | <u>27.6</u> | 357 | 27.6 |
| 470.lbm | 177 | 77.7 | 177 | 77.7 | <u>177</u> | <u>77.7</u> | 177 | 77.7 | 177 | 77.7 | <u>177</u> | <u>77.7</u> |
| 481.wrf | <u>209</u> | <u>53.5</u> | 209 | 53.4 | 209 | 53.5 | <u>209</u> | <u>53.5</u> | 209 | 53.4 | 209 | 53.5 |
| 482.sphinx3 | <u>539</u> | <u>36.2</u> | 540 | 36.1 | 538 | 36.2 | <u>539</u> | <u>36.2</u> | 540 | 36.1 | 538 | 36.2 |

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:

-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.dealII: 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.

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