



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Intel Corporation

Intel DX79SI motherboard (Intel Core i7-3960X Extreme Edition)

SPECfp®2006 = 68.3

SPECfp_base2006 = 64.8

CPU2006 license: 13

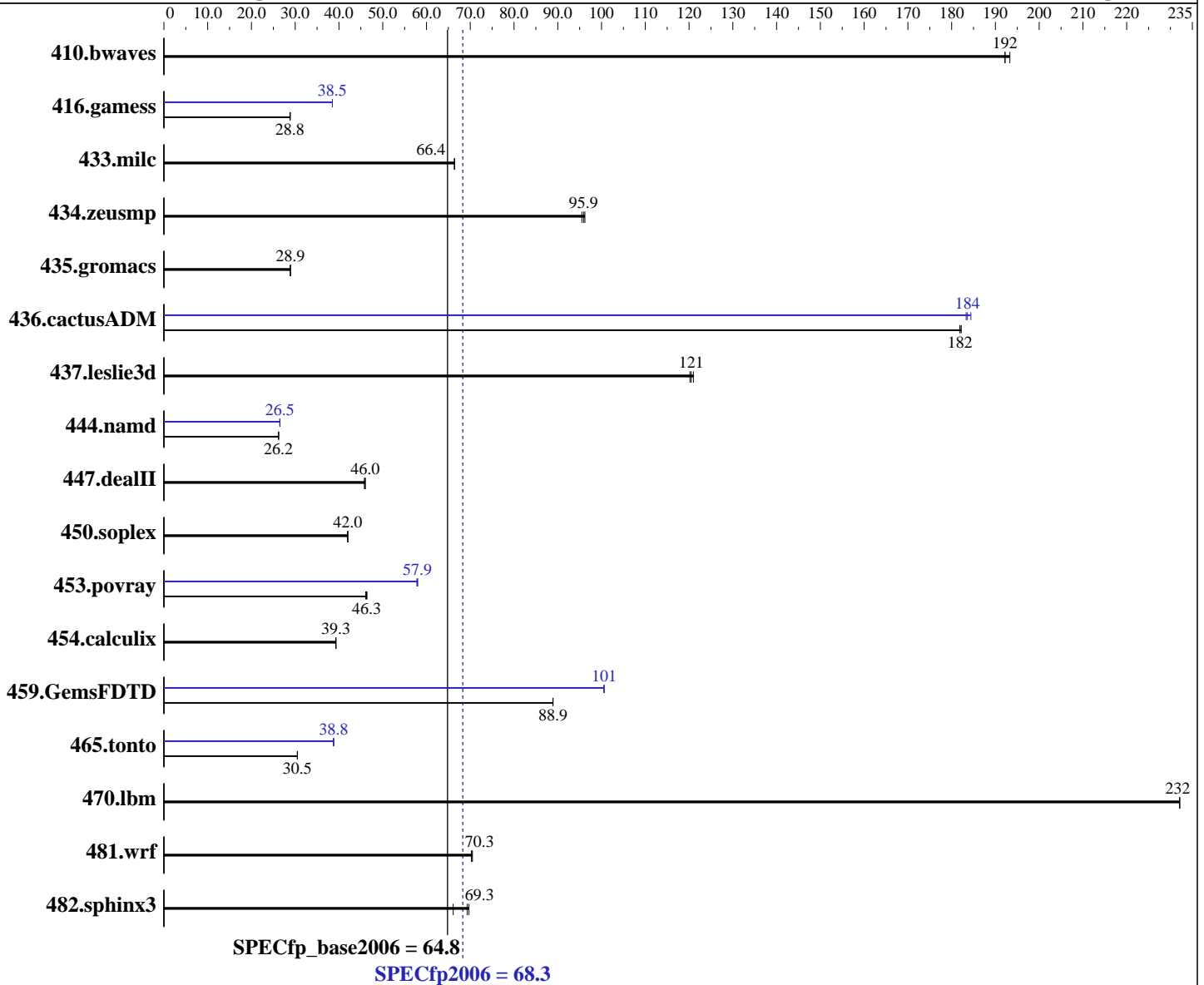
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Oct-2011

Hardware Availability: Nov-2011

Software Availability: Apr-2011



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Hardware

CPU Name: Intel Core i7-3960X Extreme Edition
 CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz
 CPU MHz: 3300
 FPU: Integrated
 CPU(s) enabled: 6 cores, 1 chip, 6 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: C/C++: Version 12.0.3.176 of Intel C++ Studio XE for Windows;
 Fortran: Version 12.0.3.176 of Intel Visual Fortran Studio XE for Windows;
 Libraries: Version 15.00.30729.01 of Microsoft Visual Studio 2008 Professional SP1
 Auto Parallel: Yes
 File System: NTFS

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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 2Rx8 PC3-12800U-11)
Disk Subsystem: Intel 160 GB SSD
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 | <u>70.7</u> | <u>192</u> | 70.3 | 193 | 70.7 | 192 | <u>70.7</u> | <u>192</u> | 70.3 | 193 | 70.7 | 192 |
| 416.gamess | 681 | 28.8 | 678 | 28.9 | <u>681</u> | <u>28.8</u> | 509 | 38.5 | 509 | 38.5 | <u>509</u> | <u>38.5</u> |
| 433.milc | 138 | 66.4 | <u>138</u> | <u>66.4</u> | 138 | 66.4 | 138 | 66.4 | <u>138</u> | <u>66.4</u> | 138 | 66.4 |
| 434.zeusmp | 94.6 | 96.2 | <u>94.9</u> | <u>95.9</u> | 95.3 | 95.5 | 94.6 | 96.2 | <u>94.9</u> | <u>95.9</u> | 95.3 | 95.5 |
| 435.gromacs | 247 | 28.9 | 247 | 28.9 | <u>247</u> | <u>28.9</u> | 247 | 28.9 | 247 | 28.9 | <u>247</u> | <u>28.9</u> |
| 436.cactusADM | 65.6 | 182 | <u>65.7</u> | <u>182</u> | 65.7 | 182 | 64.8 | 184 | 65.2 | 183 | <u>65.1</u> | <u>184</u> |
| 437.leslie3d | 78.2 | 120 | 77.7 | 121 | <u>78.0</u> | <u>121</u> | 78.2 | 120 | 77.7 | 121 | <u>78.0</u> | <u>121</u> |
| 444.namd | 306 | 26.2 | <u>306</u> | <u>26.2</u> | 306 | 26.2 | 302 | 26.5 | <u>302</u> | <u>26.5</u> | 303 | 26.5 |
| 447.dealII | 250 | 45.8 | 249 | 46.0 | <u>249</u> | <u>46.0</u> | 250 | 45.8 | 249 | 46.0 | <u>249</u> | <u>46.0</u> |
| 450.soplex | 199 | 42.0 | 198 | 42.0 | <u>198</u> | <u>42.0</u> | 199 | 42.0 | 198 | 42.0 | <u>198</u> | <u>42.0</u> |
| 453.povray | <u>115</u> | <u>46.3</u> | 115 | 46.4 | 115 | 46.1 | <u>91.9</u> | <u>57.9</u> | 91.7 | 58.0 | 92.1 | 57.8 |
| 454.calculix | 210 | 39.3 | 210 | 39.3 | <u>210</u> | <u>39.3</u> | 210 | 39.3 | 210 | 39.3 | <u>210</u> | <u>39.3</u> |
| 459.GemsFDTD | 119 | 88.9 | <u>119</u> | <u>88.9</u> | 119 | 88.9 | 106 | 101 | 106 | 101 | <u>106</u> | <u>101</u> |
| 465.tonto | 323 | 30.5 | 322 | 30.5 | <u>323</u> | <u>30.5</u> | 254 | 38.7 | 254 | 38.8 | <u>254</u> | <u>38.8</u> |
| 470.lbm | 59.2 | 232 | <u>59.2</u> | <u>232</u> | 59.2 | 232 | 59.2 | 232 | <u>59.2</u> | <u>232</u> | 59.2 | 232 |
| 481.wrf | 158 | 70.5 | <u>159</u> | <u>70.3</u> | 159 | 70.3 | 158 | 70.5 | <u>159</u> | <u>70.3</u> | 159 | 70.3 |
| 482.sphinx3 | <u>281</u> | <u>69.3</u> | 295 | 66.1 | 280 | 69.7 | <u>281</u> | <u>69.3</u> | 295 | 66.1 | 280 | 69.7 |

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

Component Notes

Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply
System was configured with an ATI HD 6990 discrete graphics card

General Notes

OMP_NUM_THREADS set to number of processors cores
KMP_AFFINITY set to granularity=fine,scatter



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Base 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

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.lelie3d: -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

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

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

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
```

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Peak Optimization Flags (Continued)

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

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.20111012.html>

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

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

<http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.20111012.xml>

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



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