



SPEC® CFP2006 Result

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Intel Corporation

SPECfp®2006 = 48.8

Intel DX58SO2 Motherboard (Intel Core i7-990X)

SPECfp_base2006 = 47.3

CPU2006 license: 13

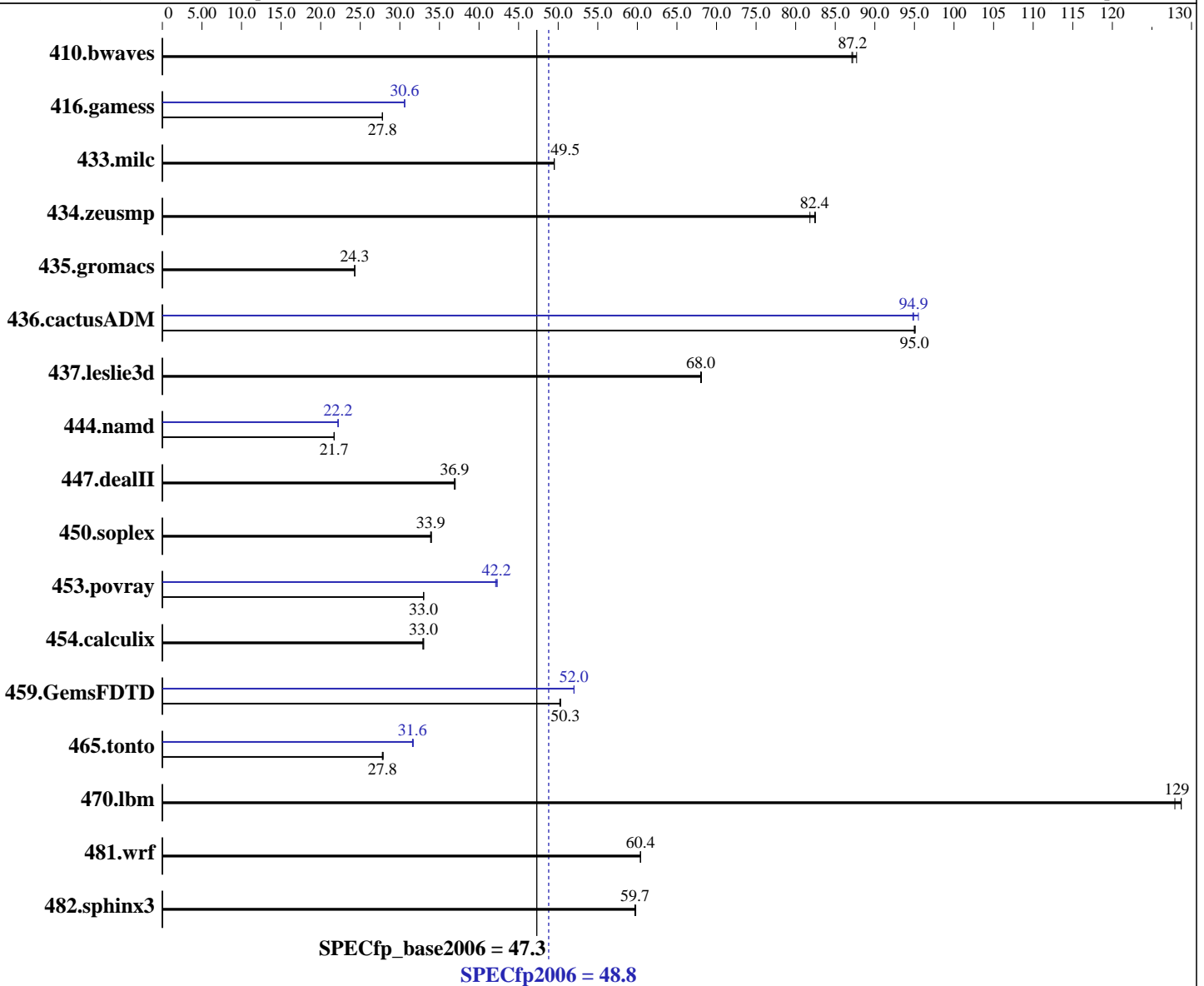
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Apr-2011

Hardware Availability: Feb-2011

Software Availability: Apr-2011



Hardware

CPU Name: Intel Core i7-990X
 CPU Characteristics: Intel Turbo Boost Technology up to 3.73 GHz
 CPU MHz: 3466
 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

Continued on next page

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

Continued on next page



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L3 Cache: 12 MB I+D on chip per chip
 Other Cache: None
 Memory: 12 GB (3 x 4 GB 2Rx8 PC3-8500U-7)
 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	155	87.7	156	87.1	<u>156</u>	<u>87.2</u>	155	87.7	156	87.1	<u>156</u>	<u>87.2</u>
416.gamess	705	27.8	705	27.8	<u>705</u>	<u>27.8</u>	<u>640</u>	<u>30.6</u>	640	30.6	640	30.6
433.milc	185	49.5	<u>186</u>	<u>49.5</u>	186	49.5	185	49.5	<u>186</u>	<u>49.5</u>	186	49.5
434.zeusmp	110	82.5	<u>110</u>	<u>82.4</u>	111	81.8	110	82.5	<u>110</u>	<u>82.4</u>	111	81.8
435.gromacs	294	24.3	<u>294</u>	<u>24.3</u>	294	24.3	294	24.3	<u>294</u>	<u>24.3</u>	294	24.3
436.cactusADM	<u>126</u>	<u>95.0</u>	126	95.0	126	95.1	<u>126</u>	<u>94.9</u>	125	95.5	126	94.8
437.leslie3d	138	68.1	<u>138</u>	<u>68.0</u>	138	68.0	138	68.1	<u>138</u>	<u>68.0</u>	138	68.0
444.namd	370	21.7	370	21.7	<u>370</u>	<u>21.7</u>	362	22.2	<u>362</u>	<u>22.2</u>	362	22.2
447.dealII	309	37.0	310	36.9	<u>310</u>	<u>36.9</u>	309	37.0	310	36.9	<u>310</u>	<u>36.9</u>
450.soplex	<u>246</u>	<u>33.9</u>	246	34.0	246	33.9	<u>246</u>	<u>33.9</u>	246	34.0	246	33.9
453.povray	161	33.0	<u>161</u>	<u>33.0</u>	161	33.0	126	42.3	126	42.1	<u>126</u>	<u>42.2</u>
454.calculix	250	33.0	251	32.9	<u>250</u>	<u>33.0</u>	250	33.0	251	32.9	<u>250</u>	<u>33.0</u>
459.GemsFDTD	211	50.3	<u>211</u>	<u>50.3</u>	211	50.2	204	52.0	<u>204</u>	<u>52.0</u>	204	52.0
465.tonto	353	27.9	354	27.8	<u>354</u>	<u>27.8</u>	<u>311</u>	<u>31.6</u>	311	31.7	312	31.6
470.lbm	107	128	107	129	<u>107</u>	<u>129</u>	107	128	107	129	<u>107</u>	<u>129</u>
481.wrf	185	60.4	<u>185</u>	<u>60.4</u>	185	60.4	185	60.4	<u>185</u>	<u>60.4</u>	185	60.4
482.sphinx3	<u>327</u>	<u>59.7</u>	327	59.7	326	59.8	<u>327</u>	<u>59.7</u>	327	59.7	326	59.8

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
 System was configured with an ATI HD6990 discrete graphics card

Base Compiler Invocation

C benchmarks:
 icl -Qvc9 -Qstd=c99

Continued on next page



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Base Compiler Invocation (Continued)

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.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

Continued on next page



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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-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.

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