



# SPEC® CFP2006 Result

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## Intel Corporation

Intel DX58SO2 motherboard (Intel Core i7-990X Extreme Edition)

SPECfp®2006 = 47.9

SPECfp\_base2006 = 46.7

CPU2006 license: 13

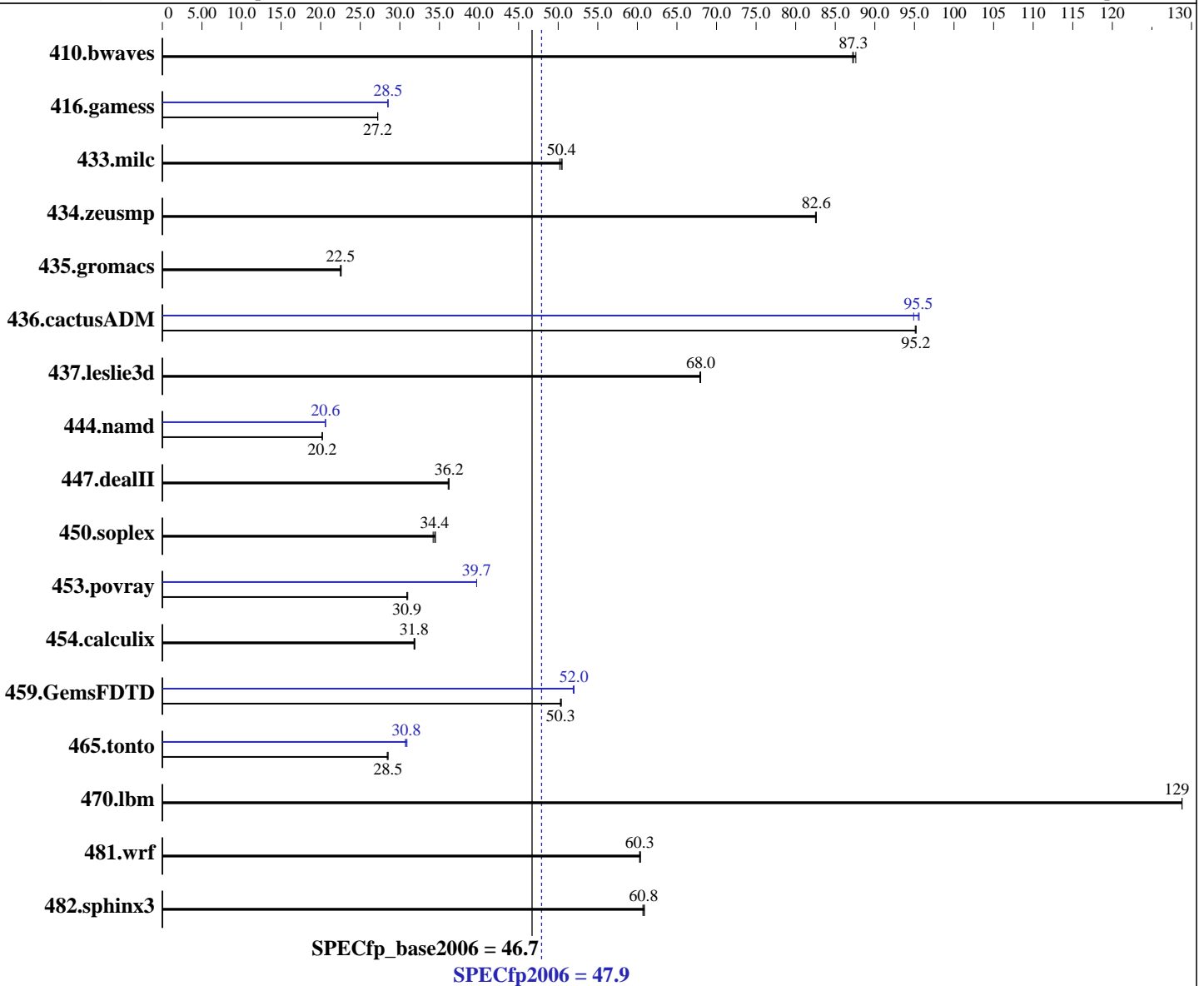
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Oct-2011

Hardware Availability: Feb-2011

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Core i7-990X Extreme Edition  
 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

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### Software

Operating System: Windows 7 Ultimate SP1 (64-bit)  
 Compiler: 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  
 System State: Default

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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 PC3-8600U-7)  
Disk Subsystem: Intel 160 GB SSD  
Other Hardware: None

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	156	87.2	<b>156</b>	<b>87.3</b>	155	87.6	156	87.2	<b>156</b>	<b>87.3</b>	155	87.6
416.gamess	721	27.2	<b>721</b>	<b>27.2</b>	721	27.2	<b>687</b>	<b>28.5</b>	687	28.5	687	28.5
433.milc	182	50.5	183	50.2	<b>182</b>	<b>50.4</b>	182	50.5	183	50.2	<b>182</b>	<b>50.4</b>
434.zeusmp	110	82.6	<b>110</b>	<b>82.6</b>	110	82.5	110	82.6	<b>110</b>	<b>82.6</b>	110	82.5
435.gromacs	317	22.6	<b>317</b>	<b>22.5</b>	317	22.5	317	22.6	<b>317</b>	<b>22.5</b>	317	22.5
436.cactusADM	126	95.2	<b>126</b>	<b>95.2</b>	126	95.1	125	95.6	126	94.9	<b>125</b>	<b>95.5</b>
437.leslie3d	138	67.9	<b>138</b>	<b>68.0</b>	138	68.0	138	67.9	<b>138</b>	<b>68.0</b>	138	68.0
444.namd	398	20.2	<b>398</b>	<b>20.2</b>	398	20.2	388	20.6	389	20.6	<b>389</b>	<b>20.6</b>
447.dealII	316	36.2	317	36.1	<b>316</b>	<b>36.2</b>	316	36.2	317	36.1	<b>316</b>	<b>36.2</b>
450.soplex	242	34.5	<b>242</b>	<b>34.4</b>	244	34.2	242	34.5	<b>242</b>	<b>34.4</b>	244	34.2
453.povray	<b>172</b>	<b>30.9</b>	172	30.9	172	31.0	134	39.7	<b>134</b>	<b>39.7</b>	134	39.7
454.calculix	260	31.8	<b>259</b>	<b>31.8</b>	259	31.9	260	31.8	<b>259</b>	<b>31.8</b>	259	31.9
459.GemsFDTD	211	50.3	<b>211</b>	<b>50.3</b>	211	50.4	204	51.9	<b>204</b>	<b>52.0</b>	204	52.0
465.tonto	346	28.5	<b>346</b>	<b>28.5</b>	346	28.4	<b>319</b>	<b>30.8</b>	319	30.9	320	30.7
470.lbm	107	129	<b>107</b>	<b>129</b>	107	129	107	129	<b>107</b>	<b>129</b>	107	129
481.wrf	185	60.3	185	60.4	<b>185</b>	<b>60.3</b>	185	60.3	185	60.4	<b>185</b>	<b>60.3</b>
482.sphinx3	321	60.7	320	60.9	<b>321</b>	<b>60.8</b>	321	60.7	320	60.9	<b>321</b>	<b>60.8</b>

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:

-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

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

`-QxSSE4.2 -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: `-QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)  
-Qipo -O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000  
shlW64M.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 shlW64M.lib -link /FORCE:MULTIPLE`

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## Peak Optimization Flags (Continued)

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

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.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>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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