



# SPEC<sup>®</sup> CFP2006 Result

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## Intel Corporation

### SPECfp<sup>®</sup>\_rate2006 = 94.7

### Intel DP55KG Motherboard (Intel Core i7-880)

### SPECfp\_rate\_base2006 = 93.0

CPU2006 license: 13

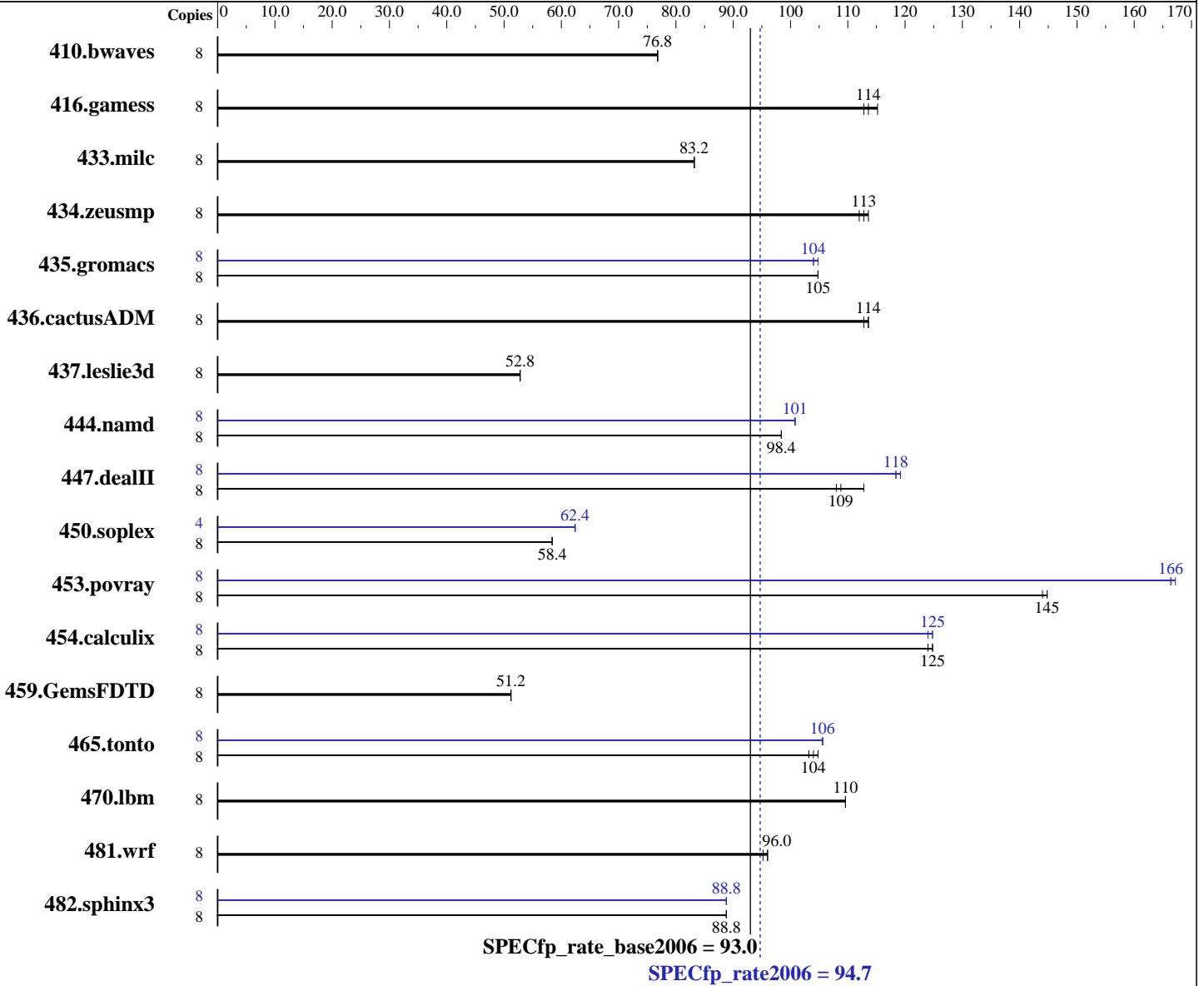
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Dec-2009

Hardware Availability: Mar-2011

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Core i7-880  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.73 GHz  
 CPU MHz: 3066  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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: Intel C++ Compiler XE for Intel 64  
 Version 12.0.3.176 Build 20110309  
 Intel Visual Fortran Compiler XE for Intel 64  
 Version 12.0.3.176 Build 20110309  
 Microsoft Visual Studio 2008 Professional SP1  
 (for libraries)

Auto Parallel: No  
 File System: NTFS

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L3 Cache: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (2 x 4 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1421	76.8	1412	76.8	<b><u>1412</u></b>	<b><u>76.8</u></b>	8	1421	76.8	1412	76.8	<b><u>1412</u></b>	<b><u>76.8</u></b>
416.gamess	8	1385	113	<b><u>1374</u></b>	<b><u>114</u></b>	1364	115	8	1385	113	<b><u>1374</u></b>	<b><u>114</u></b>	1364	115
433.milc	8	884	83.2	885	83.2	<b><u>885</u></b>	<b><u>83.2</u></b>	8	884	83.2	885	83.2	<b><u>885</u></b>	<b><u>83.2</u></b>
434.zeusmp	8	650	112	<b><u>647</u></b>	<b><u>113</u></b>	643	114	8	650	112	<b><u>647</u></b>	<b><u>113</u></b>	643	114
435.gromacs	8	<b><u>545</u></b>	<b><u>105</u></b>	545	105	545	105	8	<b><u>550</u></b>	<b><u>104</u></b>	550	104	546	105
436.cactusADM	8	844	114	<b><u>844</u></b>	<b><u>114</u></b>	846	113	8	844	114	<b><u>844</u></b>	<b><u>114</u></b>	846	113
437.leslie3d	8	1419	52.8	1417	52.8	<b><u>1419</u></b>	<b><u>52.8</u></b>	8	1419	52.8	1417	52.8	<b><u>1419</u></b>	<b><u>52.8</u></b>
444.namd	8	652	98.4	<b><u>652</u></b>	<b><u>98.4</u></b>	652	98.4	8	634	101	<b><u>634</u></b>	<b><u>101</u></b>	635	101
447.dealII	8	814	113	<b><u>840</u></b>	<b><u>109</u></b>	846	108	8	774	118	769	119	<b><u>774</u></b>	<b><u>118</u></b>
450.soplex	8	1149	58.4	<b><u>1147</u></b>	<b><u>58.4</u></b>	1145	58.4	4	534	62.4	533	62.4	<b><u>534</u></b>	<b><u>62.4</u></b>
453.povray	8	293	145	<b><u>293</u></b>	<b><u>145</u></b>	295	144	8	<b><u>255</u></b>	<b><u>166</u></b>	255	167	255	166
454.calculix	8	<b><u>530</u></b>	<b><u>125</u></b>	528	125	533	124	8	530	125	531	124	<b><u>530</u></b>	<b><u>125</u></b>
459.GemsFDTD	8	<b><u>1651</u></b>	<b><u>51.2</u></b>	1650	51.2	1652	51.2	8	<b><u>1651</u></b>	<b><u>51.2</u></b>	1650	51.2	1652	51.2
465.tonto	8	<b><u>759</u></b>	<b><u>104</u></b>	751	105	760	103	8	747	106	<b><u>745</u></b>	<b><u>106</u></b>	744	106
470.lbm	8	<b><u>1000</u></b>	<b><u>110</u></b>	1000	110	1000	110	8	<b><u>1000</u></b>	<b><u>110</u></b>	1000	110	1000	110
481.wrf	8	<b><u>934</u></b>	<b><u>96.0</u></b>	936	95.2	934	96.0	8	<b><u>934</u></b>	<b><u>96.0</u></b>	936	95.2	934	96.0
482.sphinx3	8	<b><u>1752</u></b>	<b><u>88.8</u></b>	1750	88.8	1753	88.8	8	1752	88.8	<b><u>1753</u></b>	<b><u>88.8</u></b>	1755	88.8

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

## Submit Notes

The config file option 'submit' was used.  
 The start command with the /affinity switch was used to bind processes to cores

## General Notes

Tested systems can be used with Shin-G ATX case,  
 PC Power and Cooling 1200W power supply  
 System was configured with an ATI HD5770 discrete graphics card



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CPU2006 license: 13

Test date: Dec-2009

Test sponsor: Intel Corporation

Hardware Availability: Mar-2011

Tested by: Intel Corporation

Software Availability: Apr-2011

## 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- -Qansi-alias -Qauto-ilp32  
/F1000000000 -link /FORCE:MULTIPLE

C++ benchmarks:

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

Fortran benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias /F1000000000  
-link /FORCE:MULTIPLE

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qauto-ilp32
/F1000000000 -link /FORCE:MULTIPLE
```

## 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: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE
```

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.dealIII: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias
-Qscalar-rep- -Qauto-ilp32 /F1000000000 shlw64M.lib
-link /FORCE:MULTIPLE
```

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## Peak Optimization Flags (Continued)

450.soplex: -QxSSE4.2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qauto-ilp32 /F1000000000 sh1W64M.lib  
-link /FORCE:MULTIPLE

453.povray: -QxSSE4.2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32  
/F1000000000 sh1W64M.lib -link /FORCE:MULTIPLE

### Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -QxSSE4.2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000  
-link /FORCE:MULTIPLE

### Benchmarks using both Fortran and C:

435.gromacs: -QxSSE4.2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32  
/F1000000000 -link /FORCE:MULTIPLE

436.cactusADM: basepeak = yes

454.calculix: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qauto-ilp32 /F1000000000  
-link /FORCE:MULTIPLE

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revB.20110808.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revB.20110808.xml>



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