



# SPEC® CFP2006 Result

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## Intel Corporation

Intel DH61WW motherboard (Intel Core i5-2400)

**SPECfp®\_rate2006 = 92.3**

**SPECfp\_rate\_base2006 = 90.9**

CPU2006 license: 13

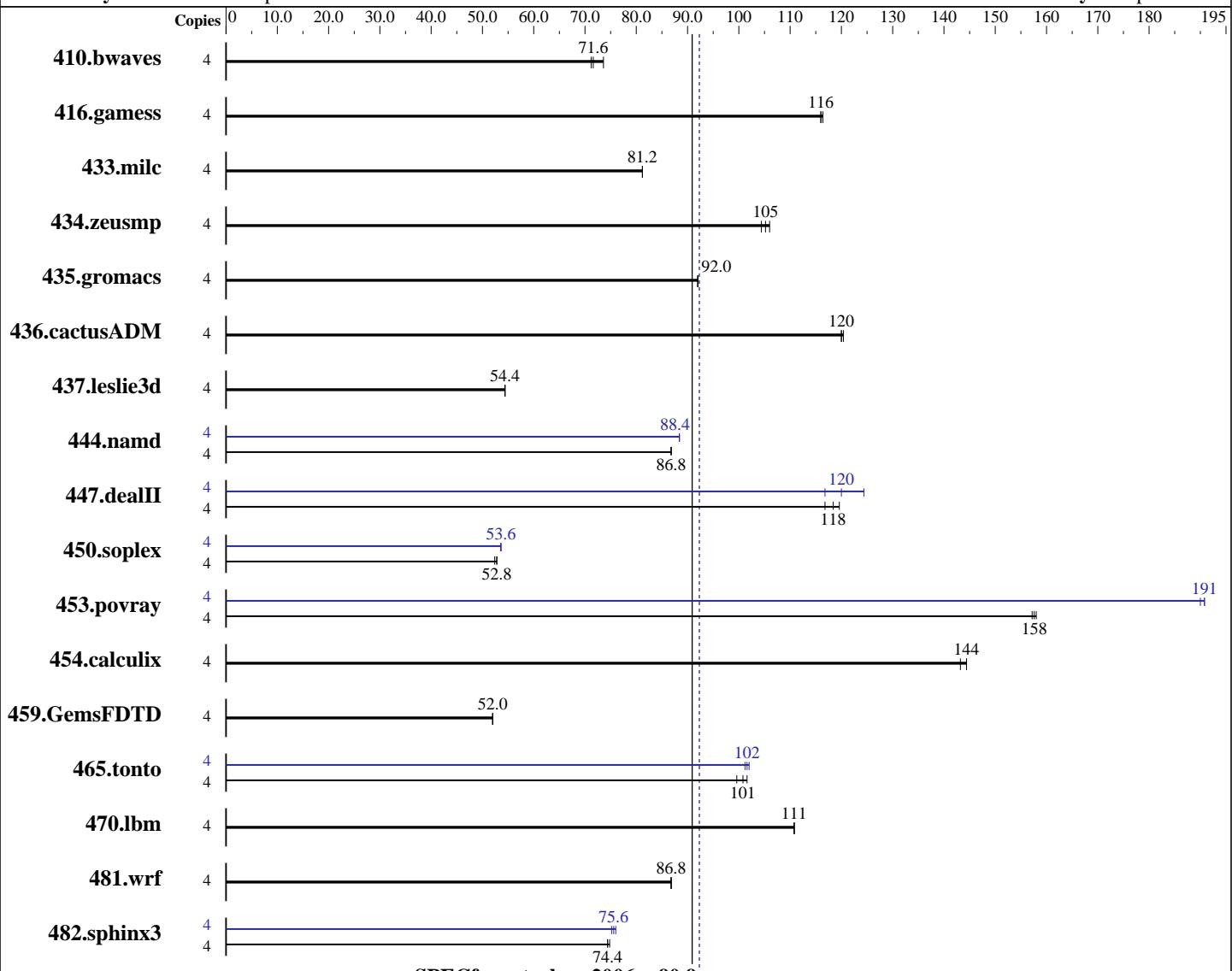
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Oct-2011

Hardware Availability: Jan-2011

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Core i5-2400  
CPU Characteristics: Intel Turbo Boost Technology up to 3.4 GHz  
CPU MHz: 3100  
FPU: Integrated  
CPU(s) enabled: 4 cores, 1 chip, 4 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

### Software

Operating System: Windows 7 Ultimate SP1 (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:  
File System: No NTFS

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L3 Cache: 6 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 4 GB (2 x 2 GB 2Rx8 PC3-10600U-9)  
 Disk Subsystem: Seagate 250GB HDD, 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	4	737	73.6	<b>761</b>	<b>71.6</b>	763	71.2	4	737	73.6	<b>761</b>	<b>71.6</b>	763	71.2
416.gamess	4	674	116	674	116	<b>674</b>	<b>116</b>	4	674	116	674	116	<b>674</b>	<b>116</b>
433.milc	4	451	81.2	<b>452</b>	<b>81.2</b>	452	81.2	4	451	81.2	<b>452</b>	<b>81.2</b>	452	81.2
434.zeusmp	4	<b>345</b>	<b>105</b>	348	104	343	106	4	<b>345</b>	<b>105</b>	348	104	343	106
435.gromacs	4	311	92.0	<b>311</b>	<b>92.0</b>	311	92.0	4	311	92.0	<b>311</b>	<b>92.0</b>	311	92.0
436.cactusADM	4	398	120	397	120	<b>398</b>	<b>120</b>	4	398	120	397	120	<b>398</b>	<b>120</b>
437.leslie3d	4	689	54.4	<b>690</b>	<b>54.4</b>	690	54.4	4	689	54.4	<b>690</b>	<b>54.4</b>	690	54.4
444.namd	4	369	86.8	369	86.8	<b>369</b>	<b>86.8</b>	4	363	88.4	363	88.4	<b>363</b>	<b>88.4</b>
447.dealII	4	392	117	<b>386</b>	<b>118</b>	383	120	4	392	117	368	124	<b>382</b>	<b>120</b>
450.soplex	4	635	52.4	632	52.8	<b>633</b>	<b>52.8</b>	4	620	53.6	<b>622</b>	<b>53.6</b>	622	53.6
453.povray	4	135	158	135	157	<b>135</b>	<b>158</b>	4	112	191	<b>112</b>	<b>191</b>	112	190
454.calculix	4	228	144	230	143	<b>229</b>	<b>144</b>	4	228	144	230	143	<b>229</b>	<b>144</b>
459.GemsFDTD	4	818	52.0	819	52.0	<b>818</b>	<b>52.0</b>	4	818	52.0	819	52.0	<b>818</b>	<b>52.0</b>
465.tonto	4	<b>390</b>	<b>101</b>	395	99.6	387	102	4	<b>387</b>	<b>102</b>	389	101	385	102
470.lbm	4	<b>496</b>	<b>111</b>	496	111	496	111	4	<b>496</b>	<b>111</b>	496	111	<b>496</b>	<b>111</b>
481.wrf	4	514	86.8	<b>514</b>	<b>86.8</b>	515	86.8	4	514	86.8	<b>514</b>	<b>86.8</b>	515	86.8
482.sphinx3	4	<b>1046</b>	<b>74.4</b>	1043	74.8	1046	74.4	4	<b>1035</b>	<b>75.2</b>	1028	<b>76.0</b>	<b>1030</b>	<b>75.6</b>

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

## Component Notes

Tested systems can be used with Shin-G ATX case,  
 PC Power and Cooling 1200W power supply

## Base Compiler Invocation

C benchmarks:

icl -Qvc9 -Qstd=c99

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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.games: -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:

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

C++ benchmarks:

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

Fortran benchmarks:

```
-QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias /F1000000000
          -link /FORCE:MULTIPLE
```

Benchmarks using both Fortran and C:

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



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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: -QxAVX -Qipo -O3 -Qprec-div- -Qunroll12 -Qansi-alias  
              -Qauto-ilp32 /F1000000000          -link /FORCE:MULTIPLE
```

C++ benchmarks:

```
444.namd: -QxAVX(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: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo  
             -O3 -Qprec-div- -Qunroll12 -Qansi-alias -Qscalar-rep-  
             -Qauto-ilp32 /F1000000000 shlw64M.lib  
             -link /FORCE:MULTIPLE
```

```
450.soplex: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo  
             -O3 -Qauto-ilp32 /F1000000000 shlw64M.lib  
             -link /FORCE:MULTIPLE
```

```
453.povray: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo  
             -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F1000000000  
             shlw64M.lib          -link /FORCE:MULTIPLE
```

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## Peak Optimization Flags (Continued)

Fortran benchmarks:

```
410.bwaves: basepeak = yes  
416.gamess: basepeak = yes  
434.zeusmp: basepeak = yes  
437.leslie3d: basepeak = yes  
459.GemsFDTD: basepeak = yes  
  
465.tonto: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo  
           -O3 -Qprec-div- -Qunroll14 -Qauto /F1000000000  
           -link /FORCE:MULTIPLE
```

Benchmarks using both Fortran and C:

```
435.gromacs: basepeak = yes  
436.cactusADM: basepeak = yes  
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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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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