



# SPEC® CFP2006 Result

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## Intel Corporation

SPECfp®2006 = **65.2**

Intel DH77KC motherboard (Intel Core i7-3770S)

SPECfp\_base2006 = **63.3**

CPU2006 license: 13

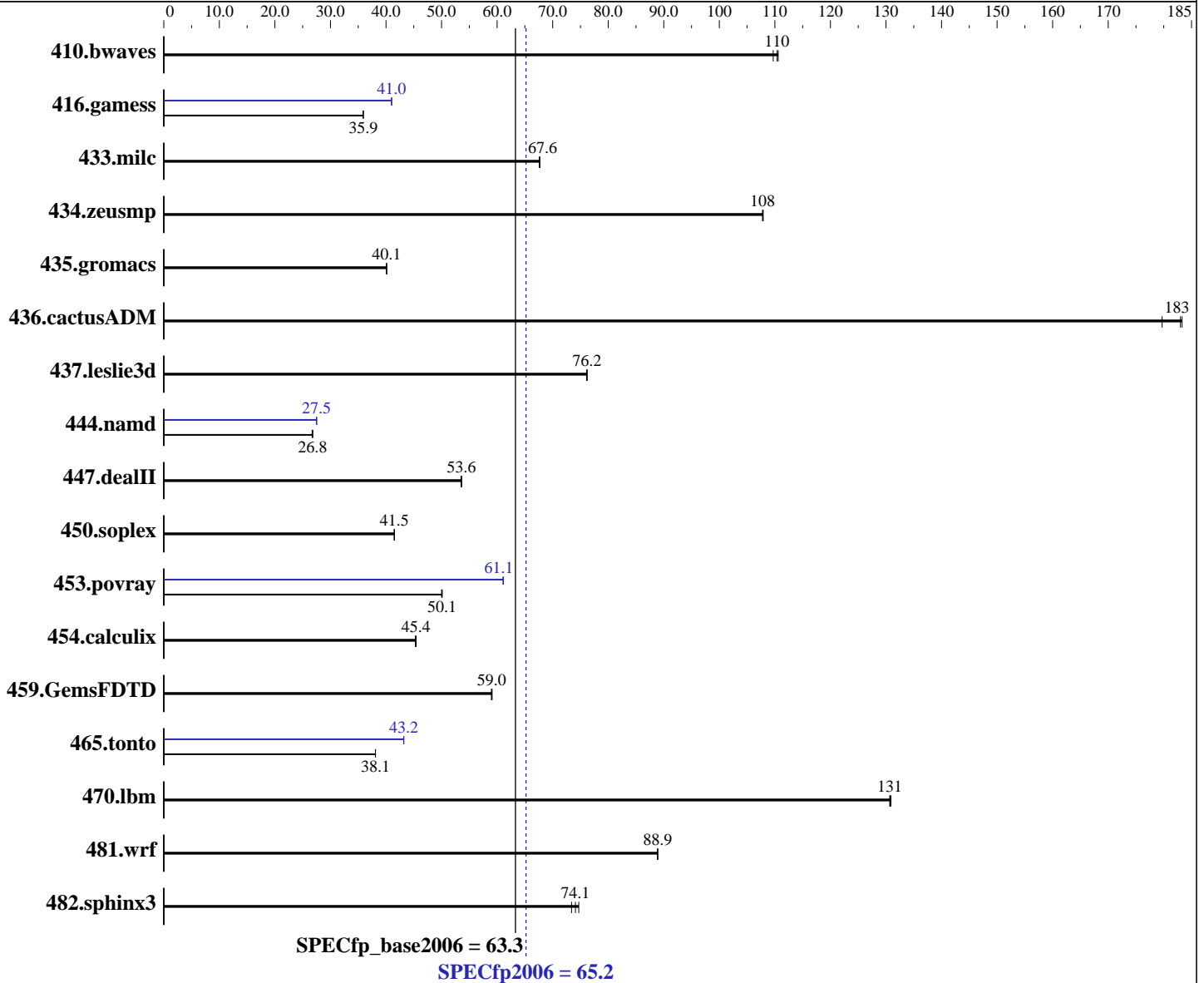
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2012

Hardware Availability: Apr-2012

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Core i7-3770S  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz  
 CPU MHz: 3100  
 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: Microsoft Windows 7 Ultimate (64-bit)  
 6.1.7601 Service Pack 1 Build 7601  
 Compiler: C/C++: Version 12.1.0.229 of Intel C++ Studio XE for Windows;  
 Fortran: Version 12.1.0.229 of Intel 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (2 x 4 GB 2Rx4 PC3-12800U-11)  
 Disk Subsystem: 1 TB Seagate 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	<b>123</b>	<b>110</b>	123	111	124	110	<b>123</b>	<b>110</b>	123	111	124	110
416.gamess	<b>546</b>	<b>35.9</b>	546	35.9	546	35.9	<b>477</b>	<b>41.0</b>	477	41.0	477	41.0
433.milc	<b>136</b>	<b>67.6</b>	136	67.6	136	67.7	<b>136</b>	<b>67.6</b>	136	67.6	136	67.7
434.zeusmp	84.3	108	<b>84.4</b>	<b>108</b>	84.4	108	84.3	108	<b>84.4</b>	<b>108</b>	84.4	108
435.gromacs	178	40.1	<b>178</b>	<b>40.1</b>	178	40.1	178	40.1	<b>178</b>	<b>40.1</b>	178	40.1
436.cactusADM	66.5	180	<b>65.3</b>	<b>183</b>	65.2	183	66.5	180	<b>65.3</b>	<b>183</b>	65.2	183
437.leslie3d	<b>123</b>	<b>76.2</b>	123	76.2	124	76.1	<b>123</b>	<b>76.2</b>	123	76.2	124	76.1
444.namd	299	26.8	300	26.7	<b>299</b>	<b>26.8</b>	<b>292</b>	<b>27.5</b>	292	27.5	292	27.5
447.dealII	214	53.6	<b>214</b>	<b>53.6</b>	214	53.5	214	53.6	<b>214</b>	<b>53.6</b>	214	53.5
450.soplex	201	41.5	201	41.5	<b>201</b>	<b>41.5</b>	201	41.5	201	41.5	<b>201</b>	<b>41.5</b>
453.povray	106	50.1	<b>106</b>	<b>50.1</b>	106	50.0	<b>87.1</b>	<b>61.1</b>	87.1	61.1	87.0	61.1
454.calculix	182	45.4	<b>182</b>	<b>45.4</b>	182	45.3	182	45.4	<b>182</b>	<b>45.4</b>	182	45.3
459.GemsFDTD	180	59.1	180	59.0	<b>180</b>	<b>59.0</b>	180	59.1	180	59.0	<b>180</b>	<b>59.0</b>
465.tonto	<b>258</b>	<b>38.1</b>	258	38.1	258	38.1	<b>228</b>	<b>43.2</b>	228	43.2	228	43.2
470.lbm	105	131	<b>105</b>	<b>131</b>	105	131	105	131	<b>105</b>	<b>131</b>	105	131
481.wrf	126	88.9	<b>126</b>	<b>88.9</b>	126	88.9	126	88.9	<b>126</b>	<b>88.9</b>	126	88.9
482.sphinx3	261	74.7	<b>263</b>	<b>74.1</b>	265	73.4	261	74.7	<b>263</b>	<b>74.1</b>	265	73.4

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

## Compiler Invocation Notes

To compile these binaries, the Intel Compiler was set up to generate 64-bit binaries with the command: "ipsxe-comp-vars.bat intel64 vs2008" (shortcut provided in the Intel(r) Parallel Studio XE 2011 program folder)

## Platform Notes

```

Sysinfo program C:\CPU200~1.17A\Docs\sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on CltE840F206A3A6 Sat May 5 01:51:04 2012

```

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see: <http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

Trying 'systeminfo'

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## Platform Notes (Continued)

OS Name : Microsoft Windows 7 Ultimate  
 OS Version : 6.1.7601 Service Pack 1 Build 7601  
 System Manufacturer: INTEL\_  
 System Model : DH77KC\_\_  
 Processor(s) : 1 Processor(s) Installed.  
     [01]: Intel64 Family 6 Model 58 Stepping 9 GenuineIntel ~3101 Mhz  
 BIOS Version : Intel Corp. KCH7710H.86A.0069.2012.0224.1825, 2/24/2012  
 Total Physical Memory: 8,090 MB

```
Trying 'wmic cpu get /value'
DeviceID      : CPU0
L2CacheSize  : 1024
L3CacheSize  : 8192
MaxClockSpeed : 3101
Name          : Intel(R) Core(TM) i7-3770S CPU @ 3.10GHz
NumberOfCores : 4
NumberOfLogicalProcessors: 8
```

(End of data from sysinfo program)

## Component Notes

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

## General Notes

OMP\_NUM\_THREADS set to number of processors cores  
 KMP\_AFFINITY set to granularity=fine,scatter  
 Binaries compiled on a system with 1x Intel Core i7-860 CPU  
 + 8GB memory using Windows 7 Enterprise 64-bit

## 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



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## 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:

```

-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

```

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

```

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Software Availability: Apr-2011

## Peak Compiler Invocation (Continued)

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.dealIII: 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

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

Continued on next page



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## Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

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: basepeak = yes

454.calculix: basepeak = yes

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-ic12.1-official-windows.20120117.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-windows.20120117.xml>

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

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