



# SPEC® CFP2006 Result

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## Intel Corporation

SPECfp®2006 = **62.3**

Intel DH77KC Motherboard (Intel Core i5-3470)

SPECfp\_base2006 = **60.7**

CPU2006 license: 13

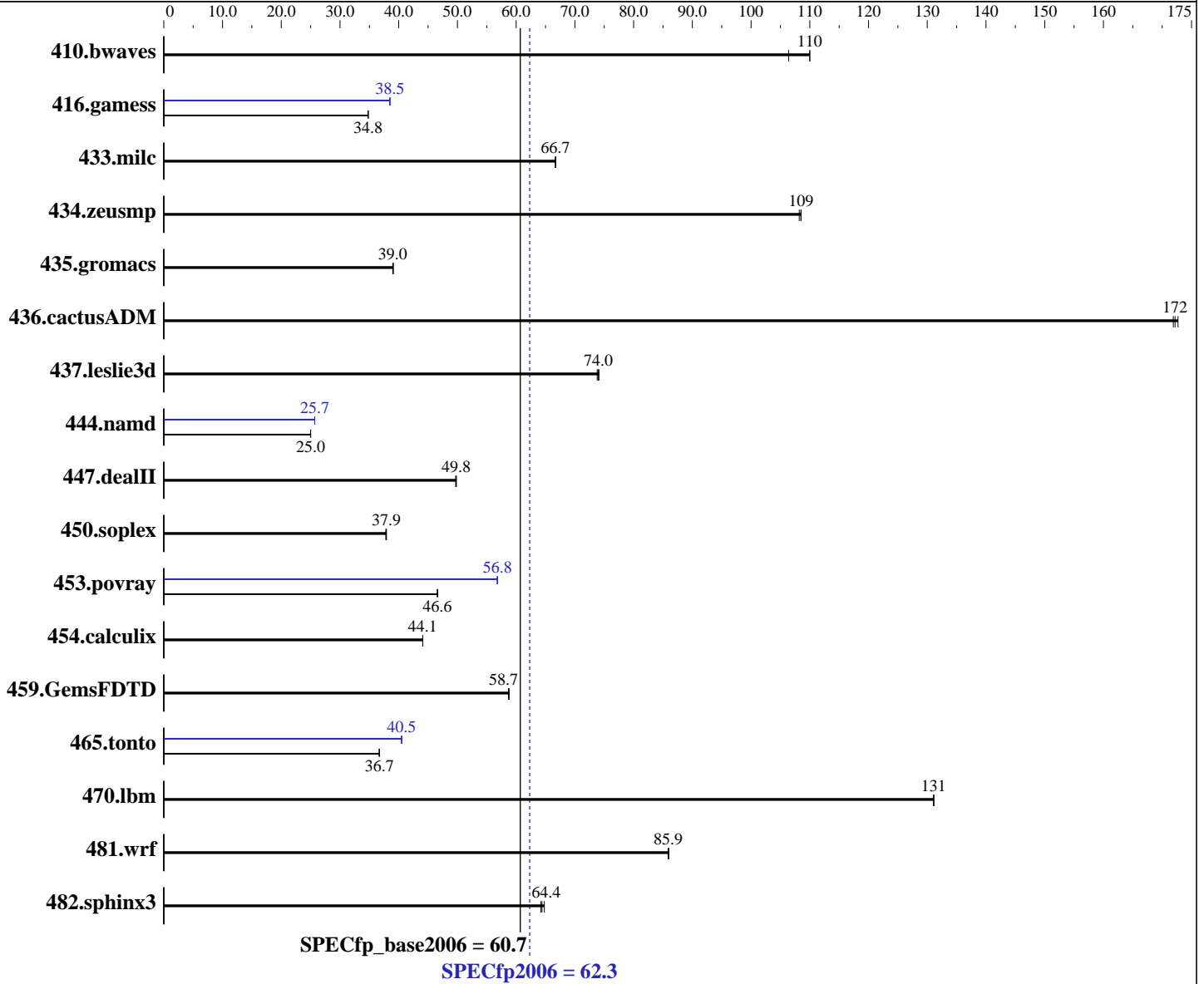
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2012

Hardware Availability: Jun-2012

Software Availability: Apr-2011



**Hardware**

CPU Name: Intel Core i5-3470  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.6 GHz  
 CPU MHz: 3200  
 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

Continued on next page

**Software**

Operating System: Microsoft Windows 7 Ultimate  
 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

Continued on next page



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L3 Cache: 6 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (2 x 4 GB 2Rx8 PC3-12800U-9)  
 Disk Subsystem: 1 TB Seagate SATA, 7200 RPM  
 Other Hardware: None

File System: NTFS  
 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	124	110	<b>124</b>	<b>110</b>	128	106	124	110	<b>124</b>	<b>110</b>	128	106
416.gamess	563	34.8	562	34.8	<b>562</b>	<b>34.8</b>	509	38.5	<b>509</b>	<b>38.5</b>	509	38.5
433.milc	138	66.7	<b>138</b>	<b>66.7</b>	138	66.7	138	66.7	<b>138</b>	<b>66.7</b>	138	66.7
434.zeusmp	83.9	109	84.1	108	<b>83.9</b>	<b>109</b>	83.9	109	84.1	108	<b>83.9</b>	<b>109</b>
435.gromacs	<b>183</b>	<b>39.0</b>	183	39.1	183	39.0	<b>183</b>	<b>39.0</b>	183	39.1	183	39.0
436.cactusADM	69.2	173	69.5	172	<b>69.4</b>	<b>172</b>	69.2	173	69.5	172	<b>69.4</b>	<b>172</b>
437.leslie3d	127	74.1	127	73.8	<b>127</b>	<b>74.0</b>	127	74.1	127	73.8	<b>127</b>	<b>74.0</b>
444.namd	321	25.0	<b>321</b>	<b>25.0</b>	321	25.0	312	25.7	<b>312</b>	<b>25.7</b>	312	25.7
447.dealII	<b>230</b>	<b>49.8</b>	230	49.8	230	49.7	<b>230</b>	<b>49.8</b>	230	49.8	230	49.7
450.soplex	221	37.8	<b>220</b>	<b>37.9</b>	220	37.9	221	37.8	<b>220</b>	<b>37.9</b>	220	37.9
453.povray	114	46.6	<b>114</b>	<b>46.6</b>	114	46.6	93.7	56.8	93.6	56.8	<b>93.6</b>	<b>56.8</b>
454.calculix	<b>187</b>	<b>44.1</b>	187	44.1	187	44.1	<b>187</b>	<b>44.1</b>	187	44.1	187	44.1
459.GemsFDTD	181	58.8	<b>181</b>	<b>58.7</b>	181	58.7	181	58.8	<b>181</b>	<b>58.7</b>	181	58.7
465.tonto	268	36.7	268	36.7	<b>268</b>	<b>36.7</b>	<b>243</b>	<b>40.5</b>	243	40.5	243	40.5
470.lbm	105	131	<b>105</b>	<b>131</b>	105	131	105	131	<b>105</b>	<b>131</b>	105	131
481.wrf	<b>130</b>	<b>85.9</b>	130	86.0	130	85.9	<b>130</b>	<b>85.9</b>	130	86.0	130	85.9
482.sphinx3	<b>303</b>	<b>64.4</b>	304	64.2	301	64.8	<b>303</b>	<b>64.4</b>	304	64.2	301	64.8

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

## Compiler Invocation Notes

ipsxe-comp-vars batch file invoked with intel64

## Platform Notes

Sysinfo program C:\CPU200~1.17A/Docs/sysinfo  
 \$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c  
 running on CltE840F20AA525 Fri May 18 21:32:52 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 ~3201 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 : 6144
MaxClockSpeed : 3201
Name : Intel(R) Core(TM) i5-3470 CPU @ 3.20GHz
NumberOfCores : 4
NumberOfLogicalProcessors: 4
```

(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

```

Continued on next page



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Hardware Availability: Jun-2012

Tested by: Intel Corporation

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

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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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