



# SPEC® CFP2006 Result

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## Intel Corporation

SPECfp®\_rate2006 = 121

Intel DH77KC motherboard (Intel Core i7-3770T)

SPECfp\_rate\_base2006 = 119

CPU2006 license: 13

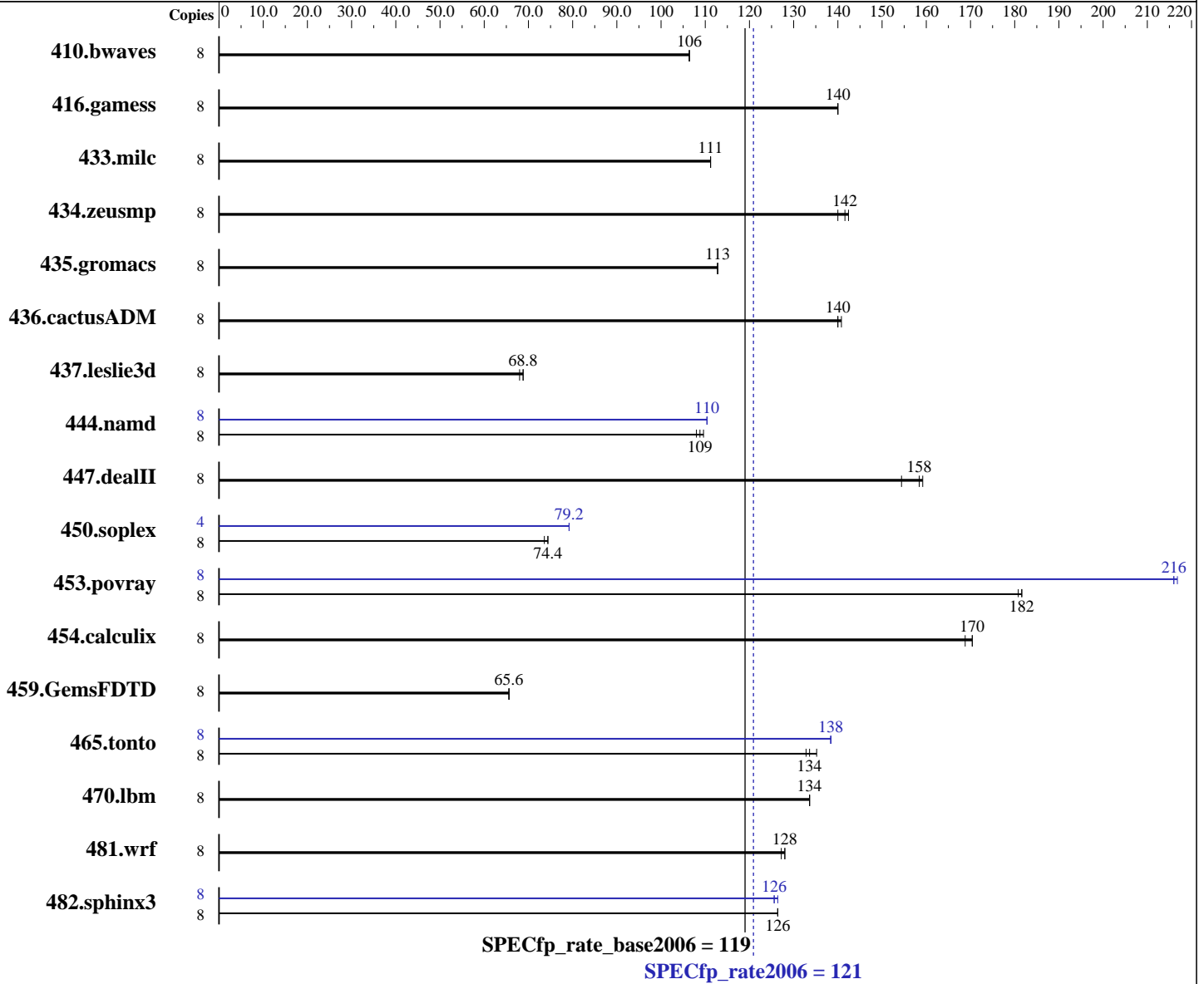
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2012

Hardware Availability: Apr-2012

Software Availability: Apr-2011



### Hardware

CPU Name: Intel Core i7-3770T  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 2500  
 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: 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 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1026	106	1022	106	<u>1022</u>	<u>106</u>	8	1026	106	1022	106	<u>1022</u>	<u>106</u>
416.gamess	8	<u>1122</u>	<u>140</u>	1122	140	1122	140	8	<u>1122</u>	<u>140</u>	1122	140	1122	140
433.milc	8	<u>662</u>	<u>111</u>	662	111	662	111	8	<u>662</u>	<u>111</u>	662	111	662	111
434.zeusmp	8	<u>514</u>	<u>142</u>	521	140	511	142	8	<u>514</u>	<u>142</u>	521	140	511	142
435.gromacs	8	507	113	<u>507</u>	<u>113</u>	507	113	8	507	113	<u>507</u>	<u>113</u>	507	113
436.cactusADM	8	681	140	<u>681</u>	<u>140</u>	680	141	8	681	140	<u>681</u>	<u>140</u>	680	141
437.leslie3d	8	1097	68.8	1111	68.0	<u>1098</u>	<u>68.8</u>	8	1097	68.8	1111	68.0	<u>1098</u>	<u>68.8</u>
444.namd	8	586	110	<u>590</u>	<u>109</u>	596	108	8	<u>582</u>	<u>110</u>	583	110	582	110
447.dealII	8	594	154	<u>579</u>	<u>158</u>	574	159	8	594	154	<u>579</u>	<u>158</u>	574	159
450.soplex	8	<u>901</u>	<u>74.4</u>	903	73.6	901	74.4	4	422	79.2	421	79.2	<u>422</u>	<u>79.2</u>
453.povray	8	<u>235</u>	<u>182</u>	235	181	234	182	8	197	217	197	216	<u>197</u>	<u>216</u>
454.calculix	8	392	169	387	170	<u>388</u>	<u>170</u>	8	392	169	387	170	<u>388</u>	<u>170</u>
459.GemsFDTD	8	1294	65.6	1295	65.6	<u>1294</u>	<u>65.6</u>	8	1294	65.6	1295	65.6	<u>1294</u>	<u>65.6</u>
465.tonto	8	<u>589</u>	<u>134</u>	584	135	591	133	8	<u>570</u>	<u>138</u>	570	138	569	138
470.lbm	8	<u>823</u>	<u>134</u>	823	134	823	134	8	<u>823</u>	<u>134</u>	823	134	823	134
481.wrf	8	701	127	700	128	<u>700</u>	<u>128</u>	8	701	127	700	128	<u>700</u>	<u>128</u>
482.sphinx3	8	<u>1231</u>	<u>126</u>	1230	126	1233	126	8	1242	126	<u>1239</u>	<u>126</u>	1236	126

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)

## Submit Notes

Processes were bound to specific processors using the start command with the /affinity switch. The config file option 'submit' was used to generate the affinity mask for each process.



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## Platform Notes

Sysinfo program C:\CPU200~1.17A\Docs\sysinfo  
\$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c  
running on CltE840F2070017 Sat May 5 19:39:58 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'

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 ~2501 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 : 2501  
Name : Intel(R) Core(TM) i7-3770T CPU @ 2.50GHz  
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

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

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## Base Compiler Invocation (Continued)

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.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 -Qopt-prefetch  
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch  
-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- -Qunroll2 -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: basepeak = yes

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

Fortran benchmarks:

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## Peak Optimization Flags (Continued)

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- -Qunroll4 -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 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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