



# SPEC<sup>®</sup> CFP2006 Result

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## Intel Corporation

SPECfp<sup>®</sup>\_rate2006 = **125**

Intel DH67BL motherboard (Intel Core i7-2700K)

SPECfp\_rate\_base2006 = **123**

CPU2006 license: 13

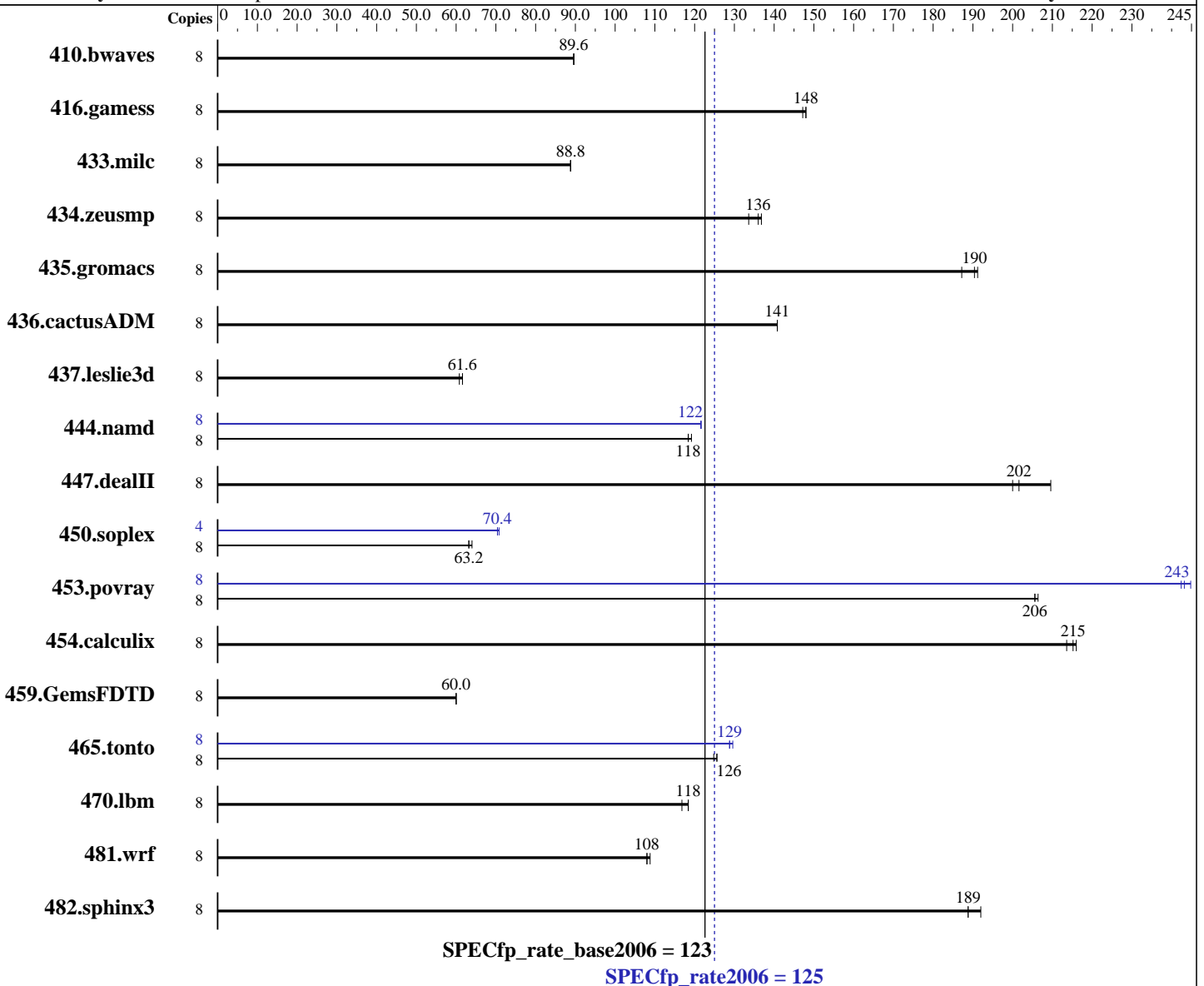
Test date: May-2014

Test sponsor: Intel Corporation

Hardware Availability: Dec-2012

Tested by: Intel Corporation

Software Availability: Oct-2013



### Hardware

### Software

CPU Name: Intel Core i7-2700K  
CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz  
CPU MHz: 3500  
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

Operating System: Microsoft Windows 8.1 Pro  
6.3.9600 N/A Build 9600  
Compiler: C/C++: Version 14.0.1.139 of Intel C++ Studio XE for Windows;  
Fortran: Version 14.0.1.139 of Intel Fortran Studio XE for Windows;  
Libraries: Version 16.00.30319.01 of Microsoft Visual Studio 2010 Professional SP1  
Auto Parallel: No

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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 PC3-10600U-9)  
 Disk Subsystem: 180 GB Intel SSD 530  
 Other Hardware: None

File System: NTFS  
 System State: Default  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap Library Version 10.0 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	<b>1214</b>	<b>89.6</b>	1215	89.6	1212	89.6	8	<b>1214</b>	<b>89.6</b>	1215	89.6	1212	89.6
416.gamess	8	<b>1061</b>	<b>148</b>	1058	148	1063	147	8	<b>1061</b>	<b>148</b>	1058	148	1063	147
433.milc	8	<b>827</b>	<b>88.8</b>	828	88.8	826	88.8	8	<b>827</b>	<b>88.8</b>	828	88.8	826	88.8
434.zeusmp	8	533	137	546	134	<b>537</b>	<b>136</b>	8	533	137	546	134	<b>537</b>	<b>136</b>
435.gromacs	8	299	191	<b>300</b>	<b>190</b>	305	187	8	299	191	<b>300</b>	<b>190</b>	305	187
436.cactusADM	8	681	141	678	141	<b>680</b>	<b>141</b>	8	681	141	678	141	<b>680</b>	<b>141</b>
437.leslie3d	8	<b>1223</b>	<b>61.6</b>	1219	61.6	1229	60.8	8	<b>1223</b>	<b>61.6</b>	1219	61.6	1229	60.8
444.namd	8	544	118	<b>542</b>	<b>118</b>	537	119	8	<b>528</b>	<b>122</b>	526	122	528	122
447.dealII	8	<b>453</b>	<b>202</b>	437	210	457	200	8	<b>453</b>	<b>202</b>	437	210	457	200
450.soplex	8	1043	64.0	1058	63.2	<b>1050</b>	<b>63.2</b>	4	472	70.8	<b>473</b>	<b>70.4</b>	473	70.4
453.povray	8	206	206	<b>207</b>	<b>206</b>	207	206	8	174	245	175	242	<b>175</b>	<b>243</b>
454.calculix	8	309	214	<b>307</b>	<b>215</b>	305	216	8	309	214	<b>307</b>	<b>215</b>	305	216
459.GemsFDTD	8	<b>1419</b>	<b>60.0</b>	1419	60.0	1420	60.0	8	<b>1419</b>	<b>60.0</b>	1419	60.0	1420	60.0
465.tonto	8	628	126	<b>628</b>	<b>126</b>	630	125	8	<b>610</b>	<b>129</b>	609	130	613	129
470.lbm	8	927	118	939	117	<b>927</b>	<b>118</b>	8	927	118	939	117	<b>927</b>	<b>118</b>
481.wrf	8	824	109	<b>825</b>	<b>108</b>	825	108	8	824	109	<b>825</b>	<b>108</b>	825	108
482.sphinx3	8	826	189	<b>826</b>	<b>189</b>	812	192	8	826	189	<b>826</b>	<b>189</b>	812	192

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 14.0 was set up to generate 64-bit binaries with the command:  
 "ipsxe-comp-vars.bat intel64 vs2010" (shortcut provided in the Intel(r) Parallel Studio XE 2013 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:\SPEC14.0/Docs/sysinfo  
\$Rev: 6775 \$ \$Date:: 2011-08-16 # \$ \8787f7622badcf24e01c368b1db4377c  
running on IVB9600 Thu May 29 15:00:59 2014

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 8.1 Pro

OS Version : 6.3.9600 N/A Build 9600

System Manufacturer: INTEL\_

System Model : DH67BL\_\_

Processor(s) : 1 Processor(s) Installed.

[01]: Intel64 Family 6 Model 42 Stepping 7 GenuineIntel ~3501 Mhz

BIOS Version : Intel Corp. BLH6710H.86A.0160.2012.1204.1156, 12/4/2012

Total Physical Memory: 8,099 MB

Trying 'wmic cpu get /value'

DeviceID : CPU0

L2CacheSize : 1024

L3CacheSize : 8192

MaxClockSpeed : 3501

Name : Intel(R) Core(TM) i7-2700K CPU @ 3.50GHz

NumberOfCores : 4

NumberOfLogicalProcessors: 8

(End of data from sysinfo program)

BIOS: SATA mode set to RAID

Windows Disk Driver: Intel Rapid Storage Technology 12.0.1.1019

## 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 -Qvc10 -Qstd=c99

C++ benchmarks:

icl -Qvc10

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<http://www.spec.org/>

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## Base Compiler Invocation (Continued)

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc10 -Qstd=c99 ifort

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_P64  
 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  
 -Qoption,cpp,--ms\_incompat\_treatment\_of\_commas\_in\_macros  
 450.soplex: -DSPEC\_CPU\_P64  
 453.povray: -DSPEC\_CPU\_P64 -DSPEC\_CPU\_NEED\_INVHYP -DNEED\_INVHYP  
 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 -Qvc10 -Qstd=c99

C++ benchmarks:

icl -Qvc10

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc10 -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: -QxAVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O3 -Qauto-ilp32 /F1000000000 sh1W64M.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  
sh1W64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: basepeak = yes

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## Peak Optimization Flags (Continued)

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 /F10000000000
           -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-ic14.0-official-windows.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-windows.xml>

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

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