



# SPEC® CFP2006 Result

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## Intel Corporation

SPECfp®\_rate2006 = 61.3

Intel DQ77MK motherboard (Intel Pentium G2010)

SPECfp\_rate\_base2006 = 60.3

CPU2006 license: 13

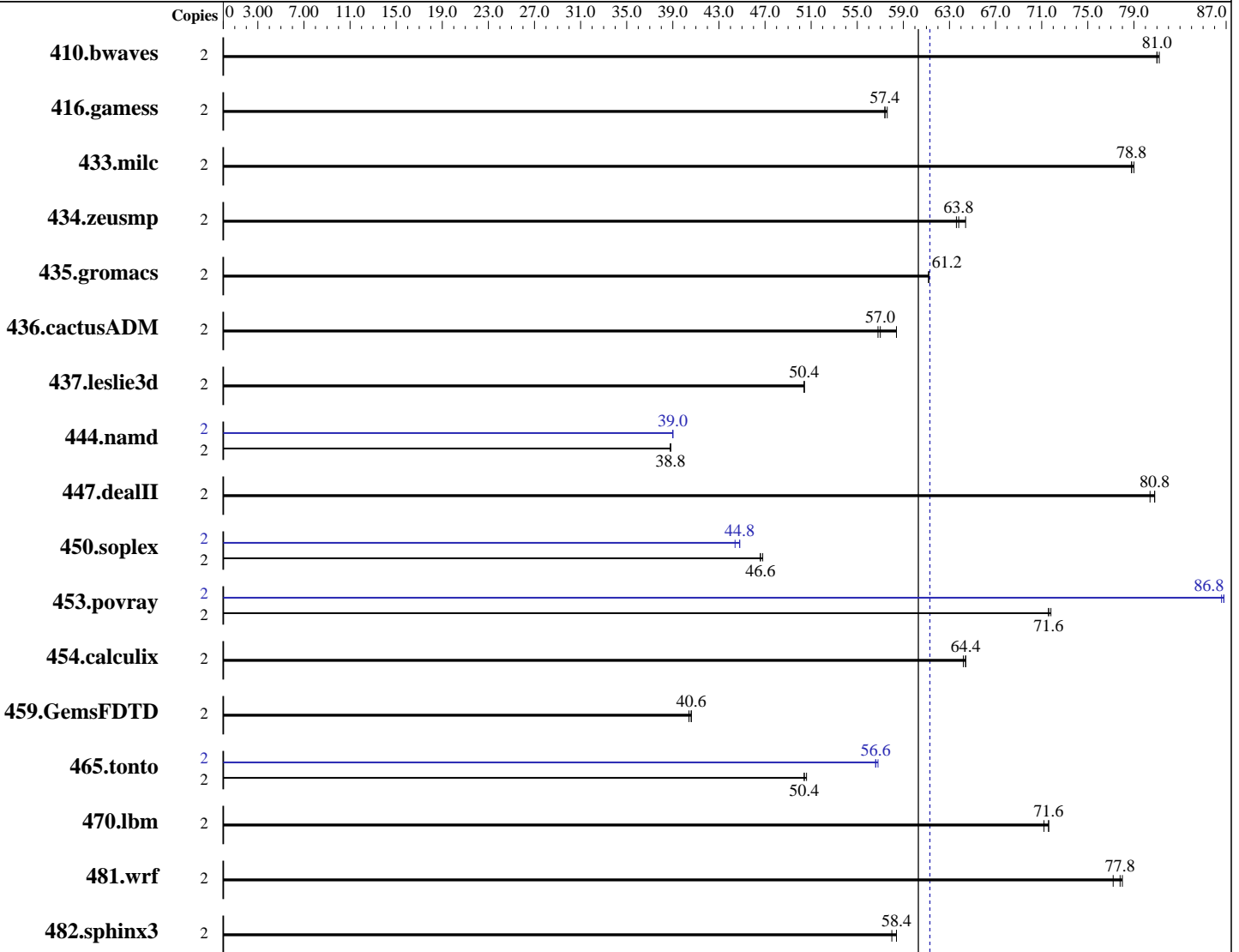
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Nov-2013

Hardware Availability: Jan-2013

Software Availability: Apr-2013



SPECfp\_rate\_base2006 = 60.3

SPECfp\_rate2006 = 61.3

### Hardware

CPU Name: Intel Pentium G2010  
 CPU Characteristics:  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 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 Enterprise  
 6.1.7601 Service Pack 1 Build 7601  
 Compiler: C/C++: Version 13.1.1.171 of Intel C++ Studio XE  
 for Windows;  
 Fortran: Version 13.1.1.171 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: 3 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 4 GB (2 x 2 GB 1Rx8 PC3-12800U-11, running at 1333 MHz and CL9)  
 Disk Subsystem: 250 GB Seagate SATA HDD, 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 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    | 2      | 335               | 81.2               | <b><u>336</u></b> | <b><u>81.0</u></b> | 336               | 81.0               | 2      | 335               | 81.2               | <b><u>336</u></b> | <b><u>81.0</u></b> | 336               | 81.0               |
| 416.gamess    | 2      | <b><u>681</u></b> | <b><u>57.4</u></b> | 682               | 57.4               | 681               | 57.6               | 2      | <b><u>681</u></b> | <b><u>57.4</u></b> | 682               | 57.4               | 681               | 57.6               |
| 433.milc      | 2      | 232               | 79.0               | <b><u>233</u></b> | <b><u>78.8</u></b> | 233               | 78.8               | 2      | 232               | 79.0               | <b><u>233</u></b> | <b><u>78.8</u></b> | 233               | 78.8               |
| 434.zeusmp    | 2      | 283               | 64.4               | <b><u>286</u></b> | <b><u>63.8</u></b> | 286               | 63.6               | 2      | 283               | 64.4               | <b><u>286</u></b> | <b><u>63.8</u></b> | 286               | 63.6               |
| 435.gromacs   | 2      | 233               | 61.2               | 233               | 61.2               | <b><u>233</u></b> | <b><u>61.2</u></b> | 2      | 233               | 61.2               | 233               | 61.2               | <b><u>233</u></b> | <b><u>61.2</u></b> |
| 436.cactusADM | 2      | 409               | 58.4               | 421               | 56.8               | <b><u>420</u></b> | <b><u>57.0</u></b> | 2      | 409               | 58.4               | 421               | 56.8               | <b><u>420</u></b> | <b><u>57.0</u></b> |
| 437.leslie3d  | 2      | 373               | 50.4               | <b><u>373</u></b> | <b><u>50.4</u></b> | 373               | 50.4               | 2      | 373               | 50.4               | <b><u>373</u></b> | <b><u>50.4</u></b> | 373               | 50.4               |
| 444.namd      | 2      | <b><u>413</u></b> | <b><u>38.8</u></b> | 413               | 38.8               | 413               | 38.8               | 2      | <b><u>412</u></b> | <b><u>39.0</u></b> | 412               | 39.0               | 411               | 39.0               |
| 447.dealII    | 2      | <b><u>284</u></b> | <b><u>80.8</u></b> | 283               | 80.8               | 284               | 80.4               | 2      | <b><u>284</u></b> | <b><u>80.8</u></b> | 283               | 80.8               | 284               | 80.4               |
| 450.soplex    | 2      | 358               | 46.6               | 356               | 46.8               | <b><u>357</u></b> | <b><u>46.6</u></b> | 2      | <b><u>373</u></b> | <b><u>44.8</u></b> | 375               | 44.4               | 372               | 44.8               |
| 453.povray    | 2      | 148               | 71.8               | 149               | 71.6               | <b><u>148</u></b> | <b><u>71.6</u></b> | 2      | 123               | 86.8               | <b><u>123</u></b> | <b><u>86.8</u></b> | 123               | 86.6               |
| 454.calculix  | 2      | 257               | 64.4               | 257               | 64.2               | <b><u>257</u></b> | <b><u>64.4</u></b> | 2      | 257               | 64.4               | 257               | 64.2               | <b><u>257</u></b> | <b><u>64.4</u></b> |
| 459.GemsFDTD  | 2      | 524               | 40.6               | 524               | 40.4               | <b><u>524</u></b> | <b><u>40.6</u></b> | 2      | 524               | 40.6               | 524               | 40.4               | <b><u>524</u></b> | <b><u>40.6</u></b> |
| 465.tonto     | 2      | <b><u>390</u></b> | <b><u>50.4</u></b> | 390               | 50.6               | 391               | 50.4               | 2      | <b><u>348</u></b> | <b><u>56.6</u></b> | 348               | 56.6               | 346               | 56.8               |
| 470.lbm       | 2      | <b><u>384</u></b> | <b><u>71.6</u></b> | 386               | 71.2               | 384               | 71.6               | 2      | <b><u>384</u></b> | <b><u>71.6</u></b> | 386               | 71.2               | 384               | 71.6               |
| 481.wrf       | 2      | <b><u>287</u></b> | <b><u>77.8</u></b> | 286               | 78.0               | 290               | 77.2               | 2      | <b><u>287</u></b> | <b><u>77.8</u></b> | 286               | 78.0               | 290               | 77.2               |
| 482.sphinx3   | 2      | 673               | 58.0               | <b><u>667</u></b> | <b><u>58.4</u></b> | 667               | 58.4               | 2      | 673               | 58.0               | <b><u>667</u></b> | <b><u>58.4</u></b> | 667               | 58.4               |

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 13.1 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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CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Nov-2013

Hardware Availability: Jan-2013

Software Availability: Apr-2013

## Platform Notes

Sysinfo program C:\SPEC13.1/Docs/sysinfo  
\$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c  
running on Clt7054D217ADD3 Sat Nov 23 19:43:46 2013

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 Enterprise  
OS Version : 6.1.7601 Service Pack 1 Build 7601  
System Manufacturer: INTEL\_  
System Model : DQ77MK\_  
Processor(s) : 1 Processor(s) Installed.  
 [01]: Intel64 Family 6 Model 58 Stepping 9 GenuineIntel ~2800 Mhz  
BIOS Version : Intel Corp. MKQ7710H.86A.0054.2012.1120.1444, 11/20/2012  
Total Physical Memory: 3,912 MB

Trying 'wmic cpu get /value'

DeviceID : CPU0  
L2CacheSize : 512  
L3CacheSize : 3072  
MaxClockSpeed : 2800  
Name : Intel(R) Pentium(R) CPU G2010 @ 2.80GHz  
NumberOfCores : 2  
NumberOfLogicalProcessors: 2

(End of data from sysinfo program)

BIOS: SATA mode set to RAID

Windows Disk Driver: Intel Rapid Storage Technology 12.5.0.1066

Windows Chipset Driver: Intel Chipset Driver 9.4.0.1027

## Component Notes

Tested systems can be used with Shin-G ATX case,  
PC Power and Cooling 1200W power supply  
Micron MT8JTF25664AZ-1G6 Series Memory DIMMs

## 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

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Tested by: Intel Corporation

Software Availability: Apr-2013

## Base Compiler Invocation (Continued)

C++ benchmarks:

icl -Qvc10

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:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch  
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

C++ benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch  
-Qcxx-features -Qauto-ilp32 /F1000000000 shlw64M.lib  
-link /FORCE:MULTIPLE

Fortran benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch  
/F1000000000 -link /FORCE:MULTIPLE

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# SPEC CFP2006 Result

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SPECfp\_rate2006 = 61.3

Intel DQ77MK motherboard (Intel Pentium G210)

SPECfp\_rate\_base2006 = 60.3

CPU2006 license: 13

Test date: Nov-2013

Test sponsor: Intel Corporation

Hardware Availability: Jan-2013

Tested by: Intel Corporation

Software Availability: Apr-2013

## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch  
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

## 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: -QxSSE4.2(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: -QxSSE4.2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib  
-link /FORCE:MULTIPLE

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SPECfp\_rate\_base2006 = 60.3

CPU2006 license: 13

Test date: Nov-2013

Test sponsor: Intel Corporation

Hardware Availability: Jan-2013

Tested by: Intel Corporation

Software Availability: Apr-2013

## Peak Optimization Flags (Continued)

453.povray: -QxSSE4.2(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:

410.bwaves: basepeak = yes

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -QxSSE4.2(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-ic13.1-official-windows.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic13.1-official-windows.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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