# SPEC® CFP2006 Result

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## Intel Corporation

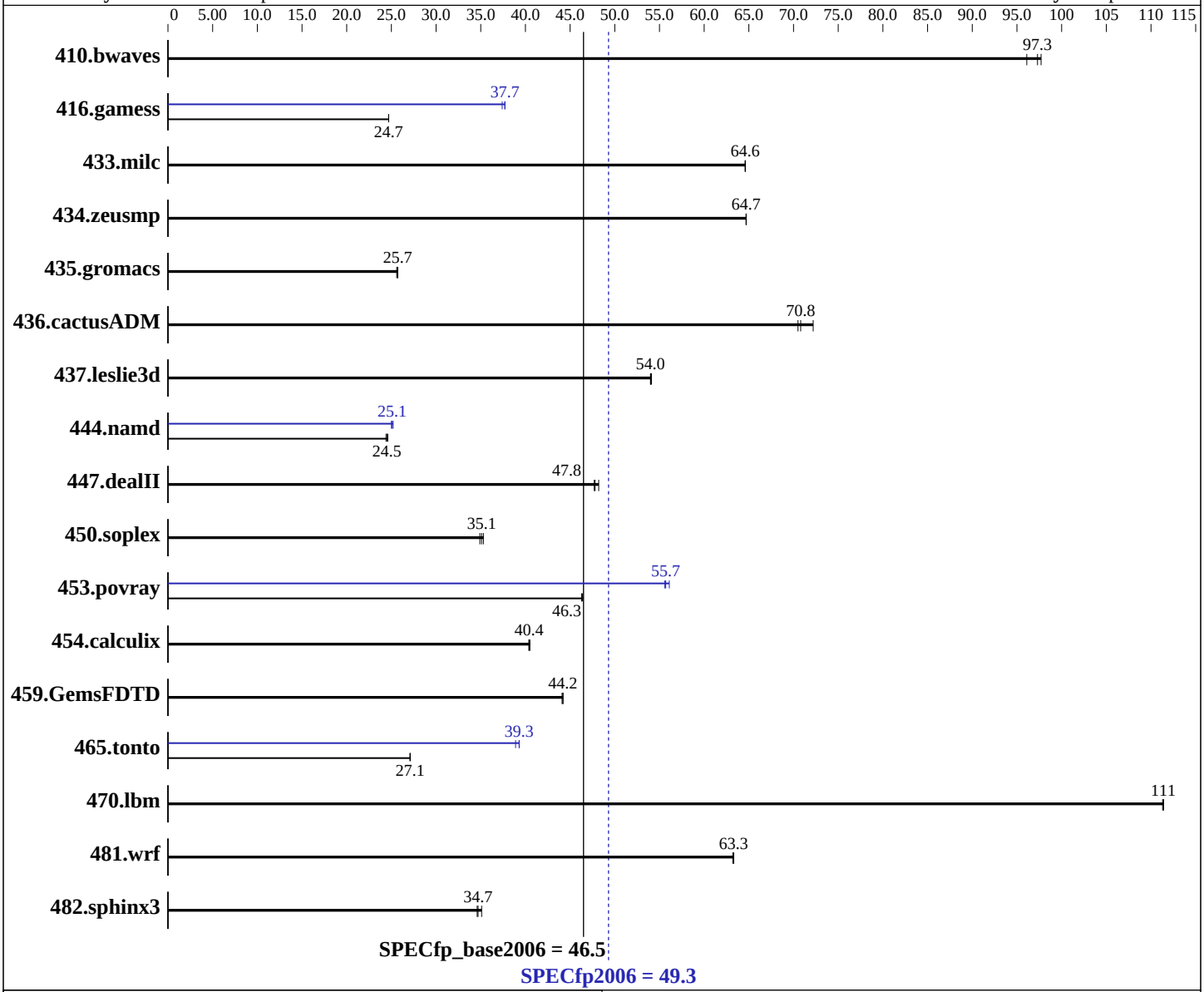
Intel DH77KC motherboard (Intel Core i5-3470T)

SPECfp®2006 = 49.3

SPECfp_base2006 = 46.5

**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 i5-3470T |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.60 GHz |
| CPU MHz: | 2900 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 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;<br>Fortran: Version 12.1.0.229 of Intel Fortran Studio XE for Windows;<br>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: 3 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 | 139 | 97.7 | **140** | **97.3** | 141 | 96.1 | 139 | 97.7 | **140** | **97.3** | 141 | 96.1 |
| 416.gamess | 792 | 24.7 | **792** | **24.7** | 792 | 24.7 | **520** | **37.7** | 524 | 37.4 | 519 | 37.7 |
| 433.milc | 142 | 64.6 | **142** | **64.6** | 142 | 64.6 | 142 | 64.6 | **142** | **64.6** | 142 | 64.6 |
| 434.zeusmp | **141** | **64.7** | 141 | 64.7 | 141 | 64.7 | **141** | **64.7** | 141 | 64.7 | 141 | 64.7 |
| 435.gromacs | **278** | **25.7** | 277 | 25.7 | 279 | 25.6 | **278** | **25.7** | 277 | 25.7 | 279 | 25.6 |
| 436.cactusADM | **169** | **70.8** | 166 | 72.2 | 169 | 70.5 | **169** | **70.8** | 166 | 72.2 | 169 | 70.5 |
| 437.leslie3d | 174 | 54.1 | **174** | **54.0** | 174 | 54.0 | 174 | 54.1 | **174** | **54.0** | 174 | 54.0 |
| 444.namd | 326 | 24.6 | **328** | **24.5** | 329 | 24.4 | 320 | 25.0 | 318 | 25.2 | **320** | **25.1** |
| 447.dealII | 237 | 48.2 | **239** | **47.8** | 240 | 47.7 | 237 | 48.2 | **239** | **47.8** | 240 | 47.7 |
| 450.soplex | 236 | 35.3 | **238** | **35.1** | 239 | 34.9 | 236 | 35.3 | **238** | **35.1** | 239 | 34.9 |
| 453.povray | 115 | 46.3 | **115** | **46.3** | 115 | 46.4 | 95.6 | 55.6 | 94.8 | 56.1 | **95.5** | **55.7** |
| 454.calculix | **204** | **40.4** | 204 | 40.4 | 204 | 40.5 | **204** | **40.4** | 204 | 40.4 | 204 | 40.5 |
| 459.GemsFDTD | 241 | 44.1 | 240 | 44.2 | **240** | **44.2** | 241 | 44.1 | 240 | 44.2 | **240** | **44.2** |
| 465.tonto | 363 | 27.1 | **364** | **27.1** | 364 | 27.1 | **251** | **39.3** | 250 | 39.3 | 253 | 38.9 |
| 470.lbm | 123 | 111 | **123** | **111** | 124 | 111 | 123 | 111 | **123** | **111** | 124 | 111 |
| 481.wrf | 177 | 63.3 | **177** | **63.3** | 177 | 63.2 | 177 | 63.3 | **177** | **63.3** | 177 | 63.2 |
| 482.sphinx3 | **562** | **34.7** | 555 | 35.1 | 563 | 34.6 | **562** | **34.7** | 555 | 35.1 | 563 | 34.6 |

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 CltE840F20AA0BD Tue May 15 22:57:33 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 ~2901 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   : 512
L3CacheSize   : 3072
MaxClockSpeed : 2901
Name          : Intel(R) Core(TM) i5-3470T CPU @ 2.90GHz
NumberOfCores : 2
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
```

## 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

# 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 shlW64M.lib
-link /FORCE:MULTIPLE

447.dealII: 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 shlW64M.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 questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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