# SPEC® CFP2006 Result

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## Intel Corporation

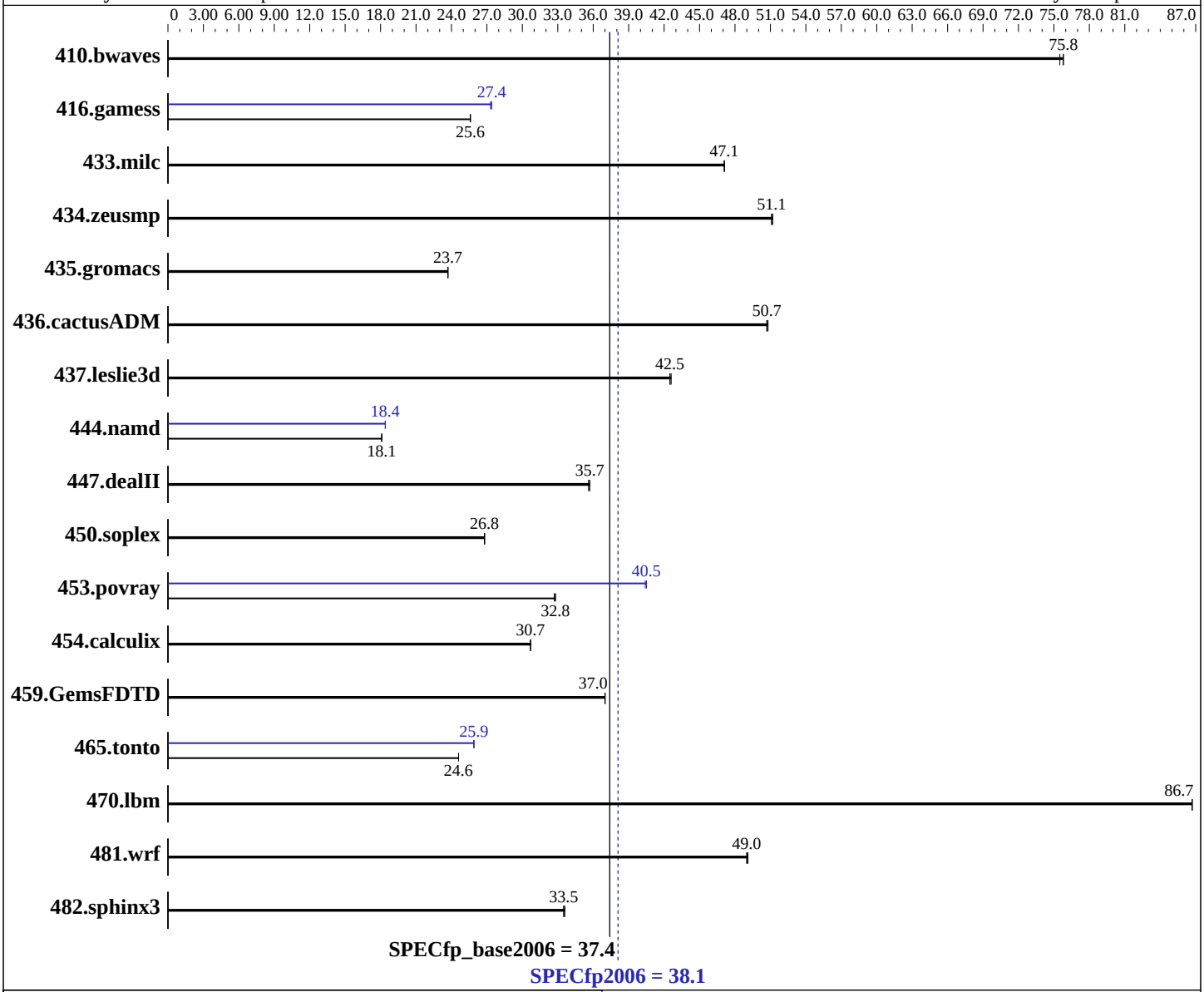
Intel DH61WW motherboard (Intel Pentium G630)

SPECfp®2006 = 38.1

SPECfp_base2006 = 37.4

**CPU2006 license:** 13
**Test sponsor:** Intel Corporation
**Tested by:** Intel Corporation

**Test date:** Dec-2011
**Hardware Availability:** Sep-2011
**Software Availability:** Sep-2011




### Hardware

| | |
|---|---|
| CPU Name: | Intel Pentium G630 |
| CPU Characteristics: | |
| CPU MHz: | 2700 |
| 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 |

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### 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 |

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L3 Cache: 3 MB I+D on chip per chip
Other Cache: None
Memory: 4 GB (2 x 2 GB 2Rx8 PC3-10600U-9, running at 1066 MHz and CL7)
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 | 180 | 75.5 | 179 | 75.8 | **179** | **75.8** | 180 | 75.5 | 179 | 75.8 | **179** | **75.8** |
| 416.gamess | **764** | **25.6** | 764 | 25.6 | 764 | 25.6 | 716 | 27.4 | 716 | 27.3 | **716** | **27.4** |
| 433.milc | 195 | 47.1 | 195 | 47.1 | **195** | **47.1** | 195 | 47.1 | 195 | 47.1 | **195** | **47.1** |
| 434.zeusmp | 178 | 51.2 | 178 | 51.1 | **178** | **51.1** | 178 | 51.2 | 178 | 51.1 | **178** | **51.1** |
| 435.gromacs | 301 | 23.7 | 302 | 23.7 | **301** | **23.7** | 301 | 23.7 | 302 | 23.7 | **301** | **23.7** |
| 436.cactusADM | 235 | 50.8 | 236 | 50.7 | **236** | **50.7** | 235 | 50.8 | 236 | 50.7 | **236** | **50.7** |
| 437.leslie3d | 221 | 42.6 | **221** | **42.5** | 221 | 42.5 | 221 | 42.6 | **221** | **42.5** | 221 | 42.5 |
| 444.namd | **444** | **18.1** | 444 | 18.1 | 444 | 18.1 | 436 | 18.4 | **436** | **18.4** | 436 | 18.4 |
| 447.dealII | 321 | 35.7 | 321 | 35.6 | **321** | **35.7** | 321 | 35.7 | 321 | 35.6 | **321** | **35.7** |
| 450.soplex | **311** | **26.8** | 311 | 26.8 | 311 | 26.8 | **311** | **26.8** | 311 | 26.8 | 311 | 26.8 |
| 453.povray | 162 | 32.8 | 163 | 32.7 | **162** | **32.8** | 132 | 40.5 | 132 | 40.4 | **132** | **40.5** |
| 454.calculix | **269** | **30.7** | 269 | 30.7 | 269 | 30.7 | **269** | **30.7** | 269 | 30.7 | 269 | 30.7 |
| 459.GemsFDTD | 287 | 37.0 | **287** | **37.0** | 287 | 37.0 | 287 | 37.0 | **287** | **37.0** | 287 | 37.0 |
| 465.tonto | **400** | **24.6** | 400 | 24.6 | 401 | 24.6 | 379 | 25.9 | **379** | **25.9** | 379 | 25.9 |
| 470.lbm | 158 | 86.7 | **158** | **86.7** | 158 | 86.7 | 158 | 86.7 | **158** | **86.7** | 158 | 86.7 |
| 481.wrf | **228** | **49.0** | 228 | 49.1 | 228 | 49.0 | **228** | **49.0** | 228 | 49.1 | 228 | 49.0 |
| 482.sphinx3 | **581** | **33.5** | 580 | 33.6 | 582 | 33.5 | **581** | **33.5** | 580 | 33.6 | 582 | 33.5 |

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:\SPEC12.1/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on CltE06995A30CB5 Thu Dec 29 08:34:29 2011

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  : DH61WW__
Processor(s)  : 1 Processor(s) Installed.
     [01]: Intel64 Family 6 Model 42 Stepping 7 GenuineIntel ~2700 Mhz
BIOS Version  : Intel Corp. BEH6110H.86A.0016.2011.0118.1128, 1/18/2011
Total Physical Memory: 4,004 MB

Trying 'wmic cpu get /value'
DeviceID      : CPU0
L2CacheSize   : 512
L3CacheSize   : 3072
MaxClockSpeed : 2700
Name          : Intel(R) Pentium(R) CPU G630 @ 2.70GHz
NumberOfCores : 2
NumberOfLogicalProcessors: 2

(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:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qauto-ilp32 /F1000000000

C++ benchmarks:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qcxx-features -Qauto-ilp32 /F1000000000 shlW64M.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch /F1000000000

Benchmarks using both Fortran and C:
-QxSSE4.2 -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: -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: basepeak = yes

453.povray: -QxSSE4.2(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: -QxSSE4.2(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: -QxSSE4.2(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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