# SPEC® CFP2006 Result

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## Intel Corporation

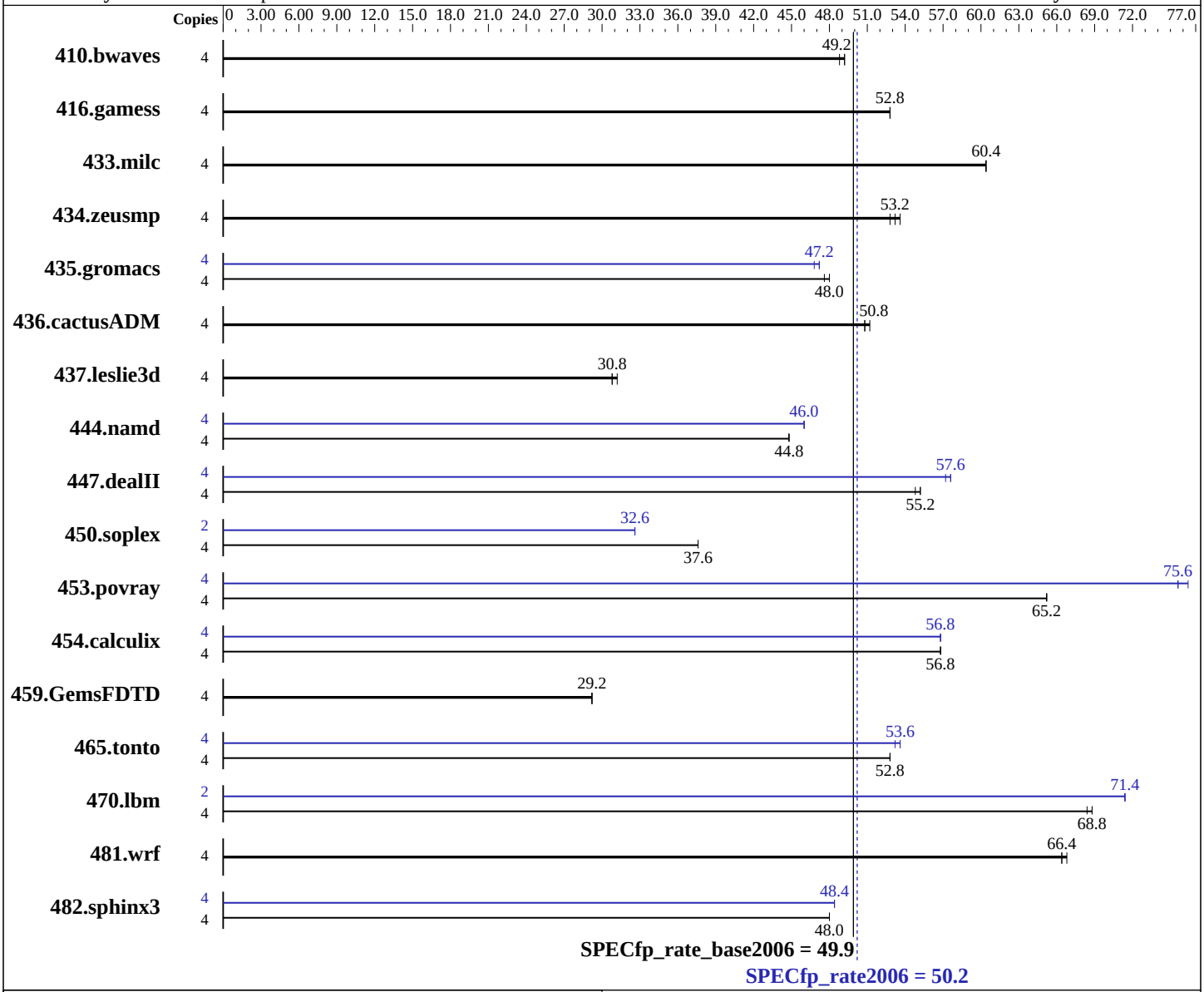
## Intel DH55PJ Motherboard (Intel Core i3-540)

**SPECfp®_rate2006 = 50.2**

**SPECfp_rate_base2006 = 49.9**

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

**Test date:** Feb-2011
**Hardware Availability:** Jan-2010
**Software Availability:** Oct-2010




### Hardware

| | |
|---|---|
| CPU Name: | Intel Core i3-540 |
| CPU Characteristics: | |
| CPU MHz: | 3066 |
| 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: | Windows Vista Ultimate w/ SP1 (64-bit) |
| Compiler: | Intel C++ Compiler XE for Intel64<br>Version 12.0.0.104 Build 20101006<br>Intel Visual Fortran Compiler XE for Intel64<br>Version 12.0.0.104 Build 20101006<br>Microsoft Visual Studio 2008 Professional SP1 (for libraries) |
| Auto Parallel: | No |
| File System: | NTFS |

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 4 GB (2 x 2 GB 2Rx8 PC3-10600U-9)
Disk Subsystem: Seagate 1 TB 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 | 4 | 1115 | 48.8 | **1106** | **49.2** | 1106 | 49.2 | 4 | 1115 | 48.8 | **1106** | **49.2** | 1106 | 49.2 |
| 416.gamess | 4 | 1481 | 52.8 | **1481** | **52.8** | 1482 | 52.8 | 4 | 1481 | 52.8 | **1481** | **52.8** | 1482 | 52.8 |
| 433.milc | 4 | 608 | 60.4 | 608 | 60.4 | **608** | **60.4** | 4 | 608 | 60.4 | 608 | 60.4 | **608** | **60.4** |
| 434.zeusmp | 4 | 681 | 53.6 | 691 | 52.8 | **684** | **53.2** | 4 | 681 | 53.6 | 691 | 52.8 | **684** | **53.2** |
| 435.gromacs | 4 | 596 | 48.0 | **597** | **48.0** | 599 | 47.6 | 4 | 606 | 47.2 | **607** | **47.2** | 608 | 46.8 |
| 436.cactusADM | 4 | **938** | **50.8** | 938 | 50.8 | 937 | 51.2 | 4 | **938** | **50.8** | 938 | 50.8 | 937 | 51.2 |
| 437.leslie3d | 4 | 1215 | 30.8 | **1213** | **30.8** | 1212 | 31.2 | 4 | 1215 | 30.8 | **1213** | **30.8** | 1212 | 31.2 |
| 444.namd | 4 | 717 | 44.8 | 718 | 44.8 | **718** | **44.8** | 4 | 699 | 46.0 | **699** | **46.0** | 699 | 46.0 |
| 447.dealII | 4 | 835 | 54.8 | 827 | 55.2 | **830** | **55.2** | 4 | **797** | **57.6** | 798 | 57.2 | 795 | 57.6 |
| 450.soplex | 4 | 891 | 37.6 | **890** | **37.6** | 889 | 37.6 | 2 | 512 | 32.6 | **512** | **32.6** | 512 | 32.6 |
| 453.povray | 4 | **326** | **65.2** | 326 | 65.2 | 326 | 65.2 | 4 | **281** | **75.6** | 279 | 76.4 | 282 | 75.6 |
| 454.calculix | 4 | **580** | **56.8** | 580 | 56.8 | 579 | 56.8 | 4 | **580** | **56.8** | 583 | 56.8 | 580 | 56.8 |
| 459.GemsFDTD | 4 | 1452 | 29.2 | **1454** | **29.2** | 1462 | 29.2 | 4 | 1452 | 29.2 | **1454** | **29.2** | 1462 | 29.2 |
| 465.tonto | 4 | **743** | **52.8** | 744 | 52.8 | 743 | 52.8 | 4 | 737 | 53.2 | 734 | 53.6 | **734** | **53.6** |
| 470.lbm | 4 | 801 | 68.4 | **801** | **68.8** | 801 | 68.8 | 2 | **385** | **71.4** | 385 | 71.4 | 385 | 71.4 |
| 481.wrf | 4 | 673 | 66.4 | **671** | **66.4** | 670 | 66.8 | 4 | 673 | 66.4 | **671** | **66.4** | 670 | 66.8 |
| 482.sphinx3 | 4 | 1620 | 48.0 | **1620** | **48.0** | 1619 | 48.0 | 4 | 1612 | 48.4 | 1611 | 48.4 | **1612** | **48.4** |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

```
The config file option 'submit' was used.
The start command with the /affinity switch was used to bind processes to cores
```

## General Notes

```
Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply
```

## Base Compiler Invocation

C benchmarks:

```
icl -Qvc9 -Qstd=c99
```

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## Base Compiler Invocation (Continued)

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- -Qansi-alias -Qauto-ilp32
/F1000000000 -link /FORCE:MULTIPLE

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

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

Benchmarks using both Fortran and C:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qauto-ilp32
/F1000000000 -link /FORCE:MULTIPLE

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

482.sphinx3:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias
-Qauto-ilp32 /F1000000000            -link /FORCE:MULTIPLE
```

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:
```
-QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias
-Qscalar-rep- -Qauto-ilp32 /F1000000000 shlW64M.lib
              -link /FORCE:MULTIPLE
```

450.soplex:
```
-QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib
              -link /FORCE:MULTIPLE
```

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
```

Continued on next page

# Peak Optimization Flags (Continued)

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: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

436.cactusADM: basepeak = yes

454.calculix: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

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-winx64-revA.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revA.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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