# SPEC® CFP2006 Result

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## Intel Corporation

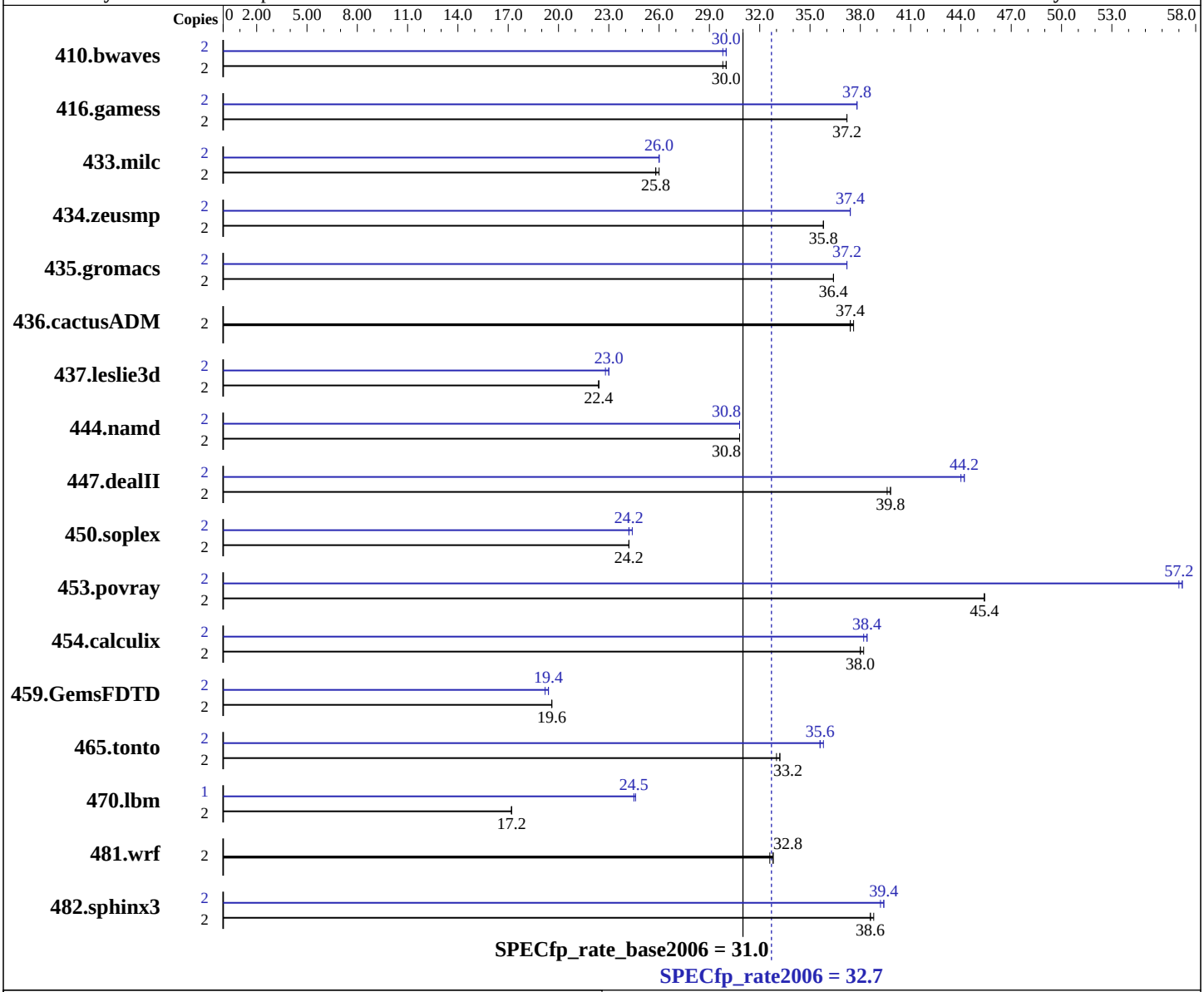
Intel DQ45CB motherboard (Intel Core 2 Duo E8400)

SPECfp®_rate2006 = 32.7

SPECfp_rate_base2006 = 31.0

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

**Test date:** Apr-2009
**Hardware Availability:** May-2009
**Software Availability:** Nov-2008




### Hardware

| | |
|---|---|
| CPU Name: | Intel Core 2 Duo E8400 |
| CPU Characteristics: | |
| CPU MHz: | 3000 |
| 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: | 6 MB I+D on chip per chip |

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### Software

| | |
|---|---|
| Operating System: | Windows Vista Ultimate w/ SP1 (64-bit) |
| Compiler: | Intel C++ Compiler Professional 11.0 for IA32<br>Build 20080930 Package ID: w_cproc_p_11.0.054<br>Intel Visual Fortran Compiler Professional 11.0 for IA32<br>Build 20080930 Package ID: w_cprof_p_11.0.054<br>Microsoft Visual Studio 2008 (for libraries) |
| Auto Parallel: | No |
| File System: | NTFS |

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L3 Cache: None
Other Cache: None
Memory: 4 GB (4x1GB DDR2-800 CL5)
Disk Subsystem: Seagate 320 GB SATA, 7200RPM
Other Hardware: None

System State: Default
Base Pointers: 32-bit
Peak Pointers: 32-bit
Other Software: SmartHeap Library Version 8.1 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 | 905 | 30.0 | **908** | **30.0** | 910 | 29.8 | 2 | **908** | **30.0** | 910 | 29.8 | 908 | 30.0 |
| 416.gamess | 2 | 1052 | 37.2 | **1052** | **37.2** | 1051 | 37.2 | 2 | 1038 | 37.8 | **1038** | **37.8** | 1038 | 37.8 |
| 433.milc | 2 | 711 | 25.8 | **710** | **25.8** | 708 | 26.0 | 2 | **708** | **26.0** | 708 | 26.0 | 708 | 26.0 |
| 434.zeusmp | 2 | 509 | 35.8 | **509** | **35.8** | 508 | 35.8 | 2 | 487 | 37.4 | **487** | **37.4** | 486 | 37.4 |
| 435.gromacs | 2 | 393 | 36.4 | 393 | 36.4 | **393** | **36.4** | 2 | 384 | 37.2 | 383 | 37.2 | **383** | **37.2** |
| 436.cactusADM | 2 | 637 | 37.6 | **638** | **37.4** | 639 | 37.4 | 2 | 637 | 37.6 | **638** | **37.4** | 639 | 37.4 |
| 437.leslie3d | 2 | 838 | 22.4 | **840** | **22.4** | 841 | 22.4 | 2 | **820** | **23.0** | 825 | 22.8 | 818 | 23.0 |
| 444.namd | 2 | 522 | 30.8 | 521 | 30.8 | **521** | **30.8** | 2 | 522 | 30.8 | **522** | **30.8** | 521 | 30.8 |
| 447.dealII | 2 | 576 | 39.8 | 577 | 39.6 | **576** | **39.8** | 2 | 520 | 44.0 | **518** | **44.2** | 518 | 44.2 |
| 450.soplex | 2 | 687 | 24.2 | **687** | **24.2** | 690 | 24.2 | 2 | 689 | 24.2 | **688** | **24.2** | 685 | 24.4 |
| 453.povray | 2 | 234 | 45.4 | 235 | 45.4 | **234** | **45.4** | 2 | 186 | 57.2 | **186** | **57.2** | 187 | 57.0 |
| 454.calculix | 2 | **433** | **38.0** | 433 | 38.0 | 433 | 38.2 | 2 | 430 | 38.4 | **431** | **38.4** | 431 | 38.2 |
| 459.GemsFDTD | 2 | 1080 | 19.6 | 1079 | 19.6 | **1079** | **19.6** | 2 | **1096** | **19.4** | 1100 | 19.2 | 1093 | 19.4 |
| 465.tonto | 2 | 598 | 33.0 | 593 | 33.2 | **593** | **33.2** | 2 | 549 | 35.8 | 553 | 35.6 | **553** | **35.6** |
| 470.lbm | 2 | 1603 | 17.2 | 1601 | 17.2 | **1601** | **17.2** | 1 | 562 | 24.5 | 559 | 24.6 | **560** | **24.5** |
| 481.wrf | 2 | 685 | 32.6 | 682 | 32.8 | **682** | **32.8** | 2 | 685 | 32.6 | 682 | 32.8 | **682** | **32.8** |
| 482.sphinx3 | 2 | 1009 | 38.6 | **1008** | **38.6** | 1004 | 38.8 | 2 | 996 | 39.2 | **991** | **39.4** | 990 | 39.4 |

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.
```

## General Notes

```
Tested systems can be used with Shin-G ATX case,
Antec Truepower Trio power supply TP3-650
Binaries were built on Windows Vista Ultimate (32-bit)
```

## Base Compiler Invocation

C benchmarks:

```
icl -Qvc9 -Qc99
```

Continued on next page

## Base Compiler Invocation (Continued)

C++ benchmarks:
icl -Qvc9

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc9 -Qc99 ifort

## Base Portability Flags

436.cactusADM: -Qlowercase /assume:underscore
444.namd: -TP
447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
453.povray: -DSPEC_CPU_WINDOWS_ICL
454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
481.wrf: -DSPEC_CPU_WINDOWS_ICL

## Base Optimization Flags

C benchmarks:
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

C++ benchmarks:
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
/F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

Fortran benchmarks:
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

Benchmarks using both Fortran and C:
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

## Peak Compiler Invocation

C benchmarks:
icl -Qvc9 -Qc99

C++ benchmarks:
icl -Qvc9

Fortran benchmarks:
ifort

Continued on next page

## Peak Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
icl -Qvc9 -Qc99 ifort

## Peak Portability Flags

436.cactusADM: -Qlowercase /assume:underscore
444.namd: -TP
447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
453.povray: -DSPEC_CPU_WINDOWS_ICL
454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
481.wrf: -DSPEC_CPU_WINDOWS_ICL

## Peak Optimization Flags

C benchmarks:

433.milc: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Oa /F1000000000

470.lbm: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

482.sphinx3: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qunroll2 /F1000000000

C++ benchmarks:

444.namd: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Oa /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

447.dealII: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qscalar-rep- /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

450.soplex: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

453.povray: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

Continued on next page

## Peak Optimization Flags (Continued)

410.bwaves: `-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000`

416.gamess: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep- /F1000000000`

434.zeusmp: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- /F1000000000`

437.leslie3d: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000`

459.GemsFDTD: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qopt-prefetch /F1000000000`

465.tonto: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000`

Benchmarks using both Fortran and C:

435.gromacs: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000`

436.cactusADM: `basepeak = yes`

454.calculix: `-QxSSE4.1 -Qipo -O3 -Qprec-div- /F1000000000`

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-ic11.0-win32-revA.20090710.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-win32-revA.20090710.xml`


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