# SPEC® CFP2006 Result

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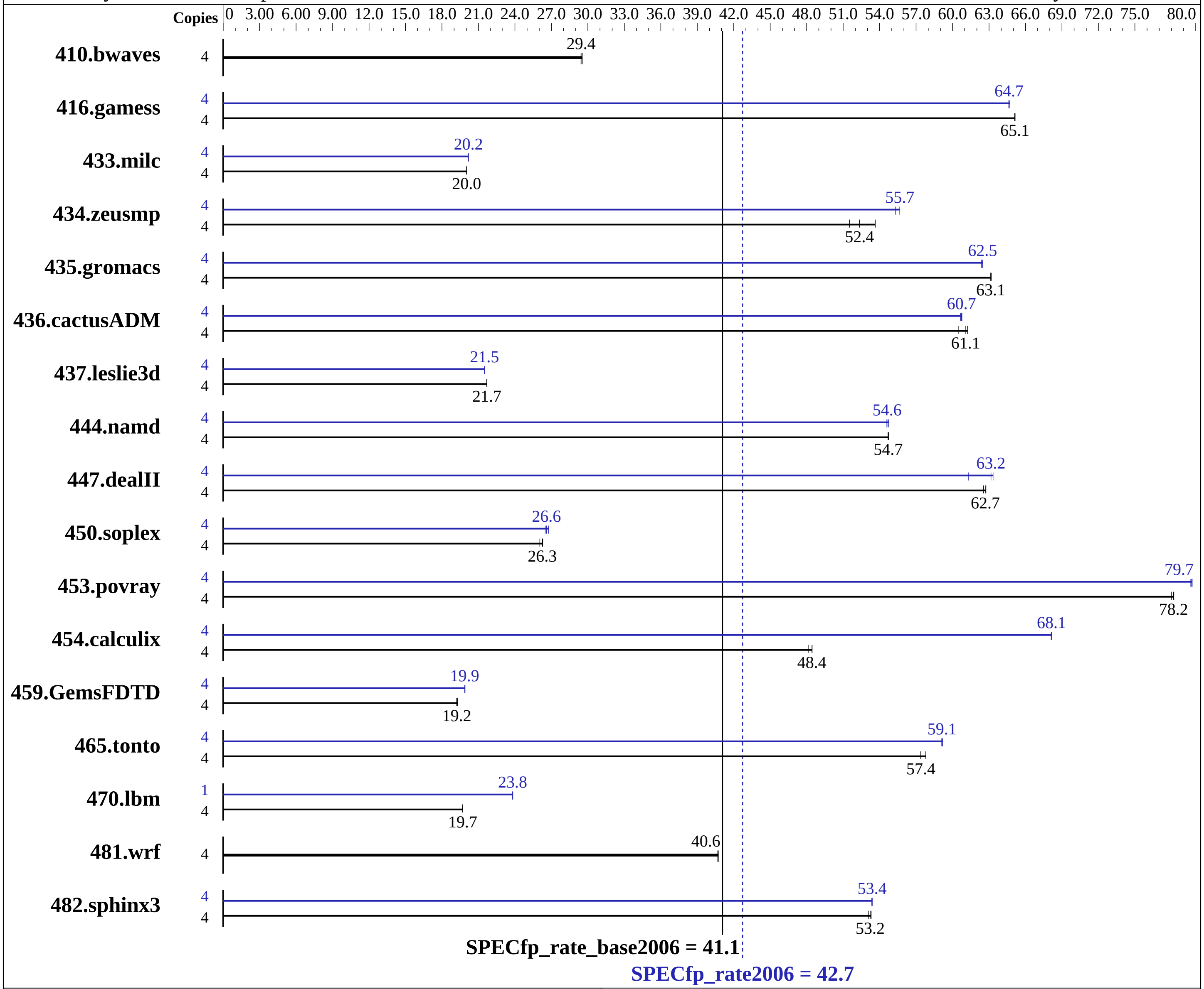
## Intel Corporation

Intel Desktop Board DQ35JO (Intel Core 2 Duo Q9450)

SPECfp®_rate2006 = 42.7

SPECfp_rate_base2006 = 41.1

| | | | |
|---|---|---|---|
| **CPU2006 license:** 13 | | **Test date:** | Feb-2008 |
| **Test sponsor:** | Intel Corporation | **Hardware Availability:** | Mar-2008 |
| **Tested by:** | Intel Corporation | **Software Availability:** | Nov-2007 |




### Hardware

| | |
|---|---|
| CPU Name: | Intel Core 2 Quad Q9450 |
| CPU Characteristics: | 2.66 GHz, 1333 FSB |
| CPU MHz: | 2667 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip |
| CPU(s) orderable: | 1 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 12 MB I+D on chip per chip, 6 MB shared / 2 cores |

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### Software

| | |
|---|---|
| Operating System: | Windows Vista Ultimate (64-bit) |
| Compiler: | Intel C++ Compiler for IA32 version 10.1<br>Build 20070913 Package ID: w_cc_p_10.1.011<br>Intel Fortran Compiler for IA32 version 10.1<br>Build 20070913 Package ID: w_fc_p_10.1.011<br>Microsoft Visual Studio 2005 SP1 (for libraries) |
| Auto Parallel: | No |
| File System: | NTFS |
| System State: | Default |

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L3 Cache: None
Other Cache: None
Memory: 4 GB (4x1GB Micron DDR2-800 CL5)
Disk Subsystem: Seagate 320GB NCQ SATA, 16MB cache, 7200 RPM
Other Hardware: None

Base Pointers: 32-bit
Peak Pointers: 32-bit
Other Software: SmartHeap Library Version 8.1 from http://www.microquill.com/

## Results Table

| | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Benchmark** | **Copies** | **Seconds** | **Ratio** | **Seconds** | **Ratio** | **Seconds** | **Ratio** | **Copies** | **Seconds** | **Ratio** | **Seconds** | **Ratio** | **Seconds** | **Ratio** |
| 410.bwaves | 4 | **1846** | **29.4** | 1840 | 29.5 | 1847 | 29.4 | 4 | **1846** | **29.4** | 1840 | 29.5 | 1847 | 29.4 |
| 416.gamess | 4 | 1203 | 65.1 | **1202** | **65.1** | 1202 | 65.1 | 4 | 1210 | 64.7 | 1212 | 64.6 | **1211** | **64.7** |
| 433.milc | 4 | 1833 | 20.0 | 1833 | 20.0 | **1833** | **20.0** | 4 | 1821 | 20.2 | **1820** | **20.2** | 1820 | 20.2 |
| 434.zeusmp | 4 | **695** | **52.4** | 706 | 51.5 | 679 | 53.6 | 4 | 654 | 55.7 | 658 | 55.3 | **654** | **55.7** |
| 435.gromacs | 4 | 452 | 63.1 | 452 | 63.2 | **452** | **63.1** | 4 | 457 | 62.5 | 458 | 62.4 | **457** | **62.5** |
| 436.cactusADM | 4 | **783** | **61.1** | 790 | 60.5 | 781 | 61.2 | 4 | 787 | 60.8 | **787** | **60.7** | 788 | 60.7 |
| 437.leslie3d | 4 | 1734 | 21.7 | 1733 | 21.7 | **1733** | **21.7** | 4 | **1749** | **21.5** | 1749 | 21.5 | 1749 | 21.5 |
| 444.namd | 4 | 586 | 54.7 | **586** | **54.7** | 587 | 54.7 | 4 | 588 | 54.6 | **587** | **54.6** | 586 | 54.7 |
| 447.dealII | 4 | 729 | 62.7 | 732 | 62.5 | **730** | **62.7** | 4 | **725** | **63.2** | 723 | 63.3 | 747 | 61.3 |
| 450.soplex | 4 | 1269 | 26.3 | **1270** | **26.3** | 1281 | 26.0 | 4 | 1247 | 26.8 | 1259 | 26.5 | **1254** | **26.6** |
| 453.povray | 4 | 272 | 78.2 | 273 | 78.0 | **272** | **78.2** | 4 | 267 | 79.6 | 267 | 79.7 | **267** | **79.7** |
| 454.calculix | 4 | 685 | 48.2 | 681 | 48.5 | **681** | **48.4** | 4 | 485 | 68.1 | **484** | **68.1** | 484 | 68.2 |
| 459.GemsFDTD | 4 | 2200 | 19.3 | **2208** | **19.2** | 2209 | 19.2 | 4 | 2136 | 19.9 | 2133 | 19.9 | **2135** | **19.9** |
| 465.tonto | 4 | **686** | **57.4** | 686 | 57.4 | 681 | 57.8 | 4 | 666 | 59.1 | 665 | 59.2 | **666** | **59.1** |
| 470.lbm | 4 | 2790 | 19.7 | **2789** | **19.7** | 2788 | 19.7 | 1 | 577 | 23.8 | **577** | **23.8** | 578 | 23.8 |
| 481.wrf | 4 | 1097 | 40.7 | **1100** | **40.6** | 1100 | 40.6 | 4 | 1097 | 40.7 | **1100** | **40.6** | 1100 | 40.6 |
| 482.sphinx3 | 4 | 1469 | 53.1 | **1465** | **53.2** | 1463 | 53.3 | 4 | 1461 | 53.4 | 1460 | 53.4 | **1460** | **53.4** |

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

## General Notes

```
Tested systems can be used with Shin-G ATX case, Antec NeoPower 480W power supply
Product description located as of 03/2008:
http://www.intel.com/products/motherboard/DQ35JO/index.htm
The system bus runs at 1333 MHz
System was configured with Asus EN8800GTX discrete graphics card
Binaries were built on Windows Vista Ultimate (32-bit)
The following VS 2005 SP1 updates were applied: KB926601 and KB932232
The start command with the /affinity switch was used to bind processes to cores
```

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## Base Compiler Invocation

C benchmarks:
`icl -Qvc8 -Qc99`

C++ benchmarks:
`icl -Qvc8`

Fortran benchmarks:
`ifort`

Benchmarks using both Fortran and C:
`icl -Qvc8 -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:
`-fast /F1000000000`

C++ benchmarks:
`-fast -Qcxx_features /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE`

Fortran benchmarks:
`-fast /F1000000000`

Benchmarks using both Fortran and C:
`-fast /F1000000000`

## Peak Compiler Invocation

C benchmarks:
`icl -Qvc8 -Qc99`

C++ benchmarks:
`icl -Qvc8`

Continued on next page

# Peak Compiler Invocation (Continued)

Fortran benchmarks:
`ifort`

Benchmarks using both Fortran and C:
`icl -Qvc8 -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: `-fast -Qunroll2 -Oa /F1000000000`

470.lbm: `-fast -Qunroll2 -Qscalar-rep- -Qprefetch /F1000000000`

482.sphinx3: `-fast -Qunroll2 /F1000000000`

C++ benchmarks:

444.namd: `-fast -Oa -Qcxx_features /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE`

447.dealII: `-fast -Qunroll2 -Qprefetch -Qcxx_features /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE`

450.soplex: `-fast -Qcxx_features /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE`

453.povray: `-fast -Qunroll4 -Qansi-alias -Qcxx_features /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE`

Fortran benchmarks:

410.bwaves: `basepeak = yes`

416.gamess: `-fast -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep- /F1000000000`

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## Peak Optimization Flags (Continued)

434.zeusmp: `-QxT -O2 -Qprec-div- -Qunroll0 -Qscalar-rep- /F1000000000`

437.leslie3d: `-fast -Qprefetch /F1000000000`

459.GemsFDTD: `-fast -Qunroll2 -Ob0 -Qprefetch /F1000000000`

465.tonto: `-fast -Qunroll4 -Qauto /F1000000000`

Benchmarks using both Fortran and C:

435.gromacs: `-fast -Oa -Qprefetch /F1000000000`

436.cactusADM: `-fast -Qunroll2 -Qprefetch /F1000000000`

454.calculix: `-fast -Qunroll-aggressive /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-ic10.1-win32-flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic10.1-win32-flags.xml


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For other inquiries, please contact webmaster@spec.org.



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