# SPEC® CFP2006 Result

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## Dell Inc.

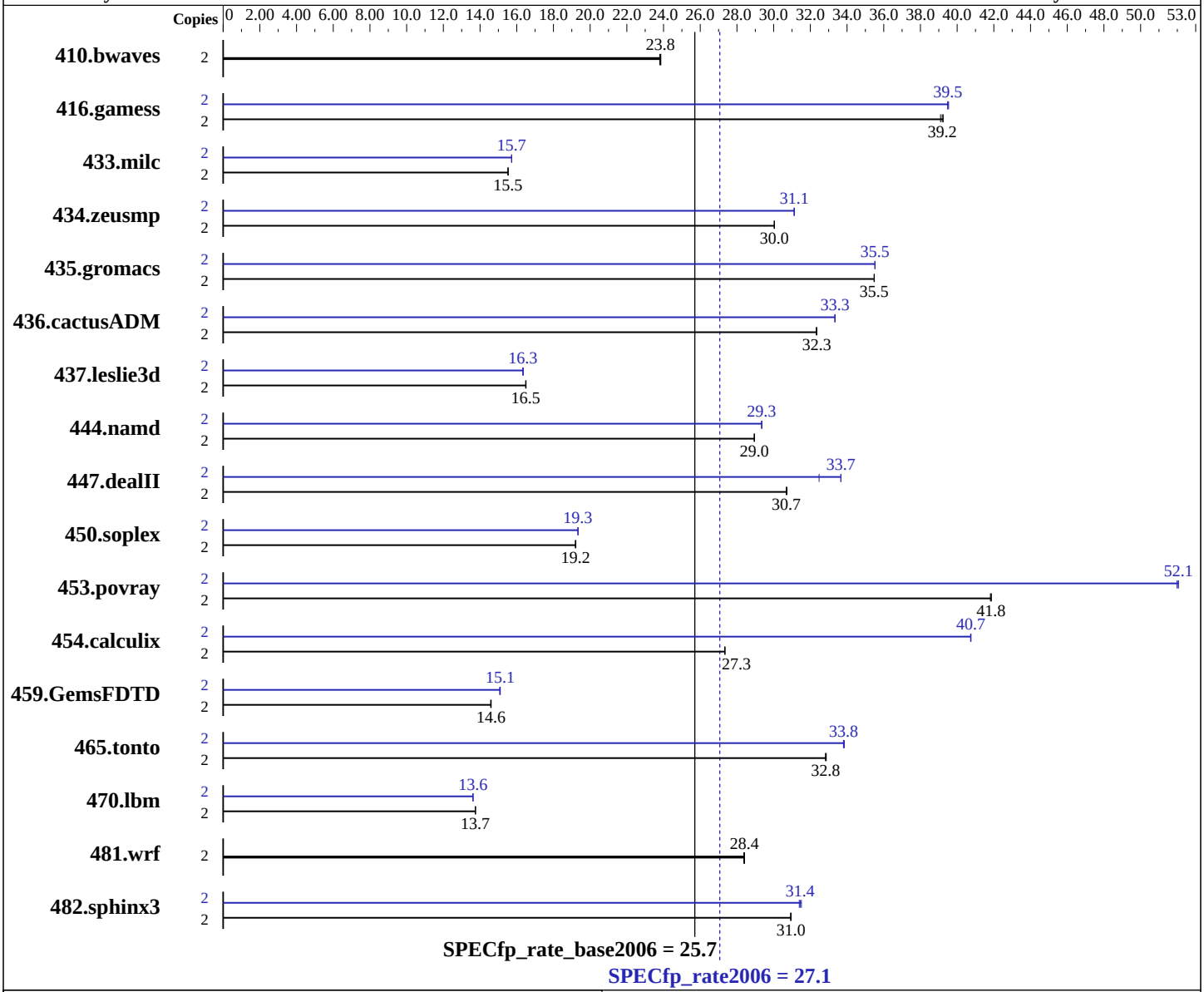
## Dell Precision M6300 (Intel X9000, 2.80 GHz)

SPECfp®_rate2006 = 27.1

SPECfp_rate_base2006 = 25.7

**CPU2006 license:** 55
**Test sponsor:** Dell Inc.
**Tested by:** Dell Inc.

**Test date:** Dec-2007
**Hardware Availability:** Jan-2008
**Software Availability:** Nov-2007




## Hardware

| | |
|---|---|
| CPU Name: | Intel Core 2 Extreme X9000 |
| CPU Characteristics: | 800 MHz Bus Speed |
| CPU MHz: | 2800 |
| 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 XP Professional x64 Edition SP2 |
| Compiler: | Intel C++ Compiler for Intel 64, Version 10.1 Build 20070809 Package ID: w_cc_p_10.1.011<br>Intel Visual Fortran Compiler for Intel 64, Version 10.0 Build 20070809 Package ID: w_fc_p_10.1.011<br>Microsoft Visual Studio 2005 SP1 |
| Auto Parallel: | No |
| File System: | NTFS |

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| | |
|---|---|
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 4 GB (2x2 GB 667 MHz CL5 DDR2) |
| Disk Subsystem: | 1 x 120GB SATA 7200 RPM |
| Other Hardware: | None |

| | |
|---|---|
| System State: | Default |
| Base Pointers: | 32/64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | MicroQuill SmartHeap Library 8.1 for x64 |

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 2 | 1142 | 23.8 | **1140** | **23.8** | 1139 | 23.9 | 2 | 1142 | 23.8 | **1140** | **23.8** | 1139 | 23.9 |
| 416.gamess | 2 | 1002 | 39.1 | **999** | **39.2** | 998 | 39.2 | 2 | 990 | 39.5 | 992 | 39.5 | **992** | **39.5** |
| 433.milc | 2 | 1183 | 15.5 | **1182** | **15.5** | 1182 | 15.5 | 2 | **1168** | **15.7** | 1168 | 15.7 | 1168 | 15.7 |
| 434.zeusmp | 2 | 606 | 30.0 | **606** | **30.0** | 606 | 30.0 | 2 | **585** | **31.1** | 585 | 31.1 | 585 | 31.1 |
| 435.gromacs | 2 | 403 | 35.5 | **402** | **35.5** | 402 | 35.5 | 2 | 402 | 35.5 | 402 | 35.5 | **402** | **35.5** |
| 436.cactusADM | 2 | 739 | 32.3 | **739** | **32.3** | 739 | 32.3 | 2 | 717 | 33.4 | **717** | **33.3** | 717 | 33.3 |
| 437.leslie3d | 2 | 1140 | 16.5 | 1139 | 16.5 | **1140** | **16.5** | 2 | 1151 | 16.3 | 1149 | 16.4 | **1151** | **16.3** |
| 444.namd | 2 | 554 | 28.9 | **554** | **29.0** | 554 | 29.0 | 2 | **547** | **29.3** | 547 | 29.3 | 546 | 29.4 |
| 447.dealII | 2 | 746 | 30.7 | 745 | 30.7 | **746** | **30.7** | 2 | 705 | 32.5 | 680 | 33.7 | **680** | **33.7** |
| 450.soplex | 2 | 869 | 19.2 | **869** | **19.2** | 868 | 19.2 | 2 | 862 | 19.3 | 863 | 19.3 | **863** | **19.3** |
| 453.povray | 2 | **254** | **41.8** | 254 | 41.8 | 254 | 41.9 | 2 | 204 | 52.1 | **204** | **52.1** | 205 | 52.0 |
| 454.calculix | 2 | 604 | 27.3 | 603 | 27.3 | **603** | **27.3** | 2 | 405 | 40.7 | 405 | 40.8 | **405** | **40.7** |
| 459.GemsFDTD | 2 | 1456 | 14.6 | 1453 | 14.6 | **1453** | **14.6** | 2 | 1408 | 15.1 | **1405** | **15.1** | 1405 | 15.1 |
| 465.tonto | 2 | 599 | 32.9 | **599** | **32.8** | 599 | 32.8 | 2 | 581 | 33.9 | 582 | 33.8 | **582** | **33.8** |
| 470.lbm | 2 | **1999** | **13.7** | 1999 | 13.7 | 1999 | 13.7 | 2 | **2018** | **13.6** | 2018 | 13.6 | 2018 | 13.6 |
| 481.wrf | 2 | 787 | 28.4 | **786** | **28.4** | 786 | 28.4 | 2 | 787 | 28.4 | **786** | **28.4** | 786 | 28.4 |
| 482.sphinx3 | 2 | 1259 | 31.0 | **1259** | **31.0** | 1261 | 30.9 | 2 | 1242 | 31.4 | 1237 | 31.5 | **1240** | **31.4** |

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

## General Notes

```
Binaries were built on Windows Vista Ultimate (64-bit)
```

## Base Compiler Invocation

C benchmarks:

```
icl -Qstd=c99
```

C++ benchmarks:

```
icl
```

Fortran benchmarks:

```
ifort
```

Continued on next page

## Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
icl -Qstd=c99 ifort

## Base Portability Flags

410.bwaves: -DSPEC_CPU_P64
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 -Qlowercase /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 -Qlowercase
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:
-fast -Qauto-ilp32 /F1000000000 shlw64m.lib
-link /FORCE:MULTIPLE

C++ benchmarks:
-fast -Qauto-ilp32 -Qcxx_features /F1000000000 shlw64m.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:
-fast -Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

Benchmarks using both Fortran and C:
-fast -Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

## Peak Compiler Invocation

C benchmarks:
icl -Qstd=c99

Continued on next page

## Peak Compiler Invocation (Continued)

C++ benchmarks:
icl

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qstd=c99 ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32 -Qunroll2 -Oa /F1000000000 shlw64m.lib -link /FORCE:MULTIPLE

470.lbm: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32 -Qunroll2 -Qscalar-rep- -Qprefetch /F1000000000 shlw64m.lib -link /FORCE:MULTIPLE

482.sphinx3: -fast -Qauto-ilp32 -Qunroll2 /F1000000000 shlw64m.lib -link /FORCE:MULTIPLE

C++ benchmarks:

444.namd: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32 -Oa -Qcxx_features /F1000000000 shlw64m.lib -link /FORCE:MULTIPLE

447.dealII: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32 -Qunroll2 -Qprefetch -Qcxx_features /F1000000000 shlw64m.lib -link /FORCE:MULTIPLE

450.soplex: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32 -Qcxx_features /F1000000000 shlw64m.lib -link /FORCE:MULTIPLE

453.povray: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32 -Qunroll4 -Qansi-alias -Qcxx_features /F1000000000 shlw64m.lib -link /FORCE:MULTIPLE

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# Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep- /F1000000000
-link /FORCE:MULTIPLE

434.zeusmp: -Qprof_gen(pass 1) -Qprof_use(pass 2) -QxT -O2 -Qprec-div-
-Qunroll0 -Qscalar-rep- /F1000000000
-link /FORCE:MULTIPLE

437.leslie3d: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qprefetch /F1000000000 -link /FORCE:MULTIPLE

459.GemsFDTD: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qunroll2 -Ob0 -Qprefetch /F1000000000
-link /FORCE:MULTIPLE

465.tonto: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qunroll4 -Qauto /F1000000000
-link /FORCE:MULTIPLE

Benchmarks using both Fortran and C:

435.gromacs: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Oa -Qprefetch /F1000000000
-link /FORCE:MULTIPLE

436.cactusADM: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qunroll2 -Qprefetch /F1000000000
-link /FORCE:MULTIPLE

454.calculix: -fast -Qauto-ilp32 -Qunroll-aggressive /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/dell.ic10.1.windows.flags.20090714.01.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/dell.ic10.1.windows.flags.20090714.01.xml

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 15:21:25 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 January 2008.