# SPEC® CFP2006 Result

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## Dell Inc.

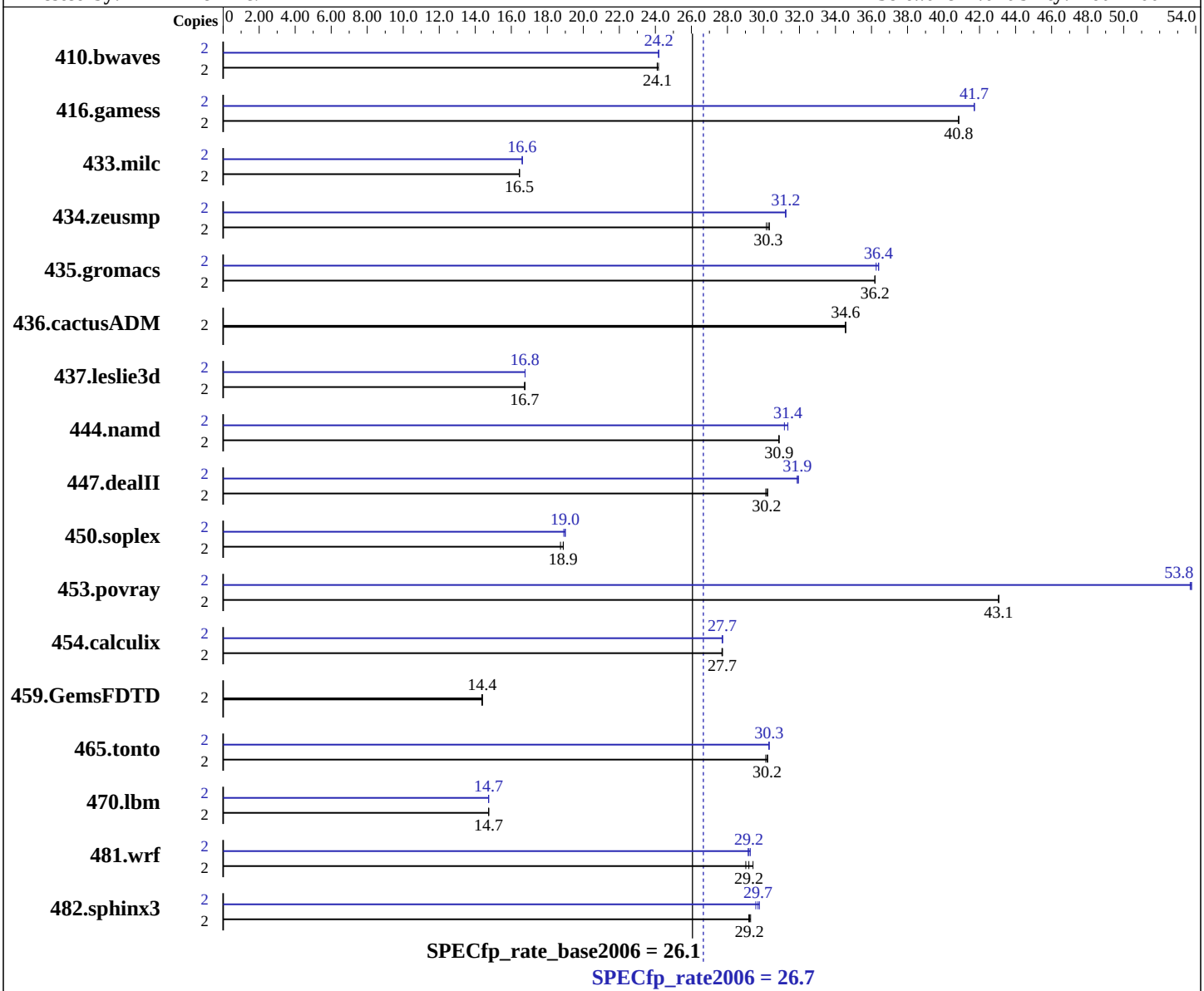
## Dell Precision 390 (Intel X6800, 2.93 GHz)

**SPECfp®_rate2006 = 26.7**

**SPECfp_rate_base2006 = 26.1**

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

**Test date:** Aug-2007
**Hardware Availability:** Sep-2007
**Software Availability:** Jun-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Core 2 Extreme X6800 |
| CPU Characteristics: | 1066 MHz Bus Speed |
| CPU MHz: | 2933 |
| 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: | 4 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 10.0 Build 20070426 Package ID: W_CC_P_10.0.025<br>Intel Visual Fortran Compiler for Intel 64, Version 10.0 Build 20070426 Package ID: W_FC_P_10.0.025<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 (4x1 GB 667 MHz ECC CL5 DDR2)
Disk Subsystem: 1 x 80 GB SATA 7200 RPM
Other Hardware: None

System State: Default
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: MicroQuill SmartHeap Library 8.0 for x64

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 2 | 1128 | 24.1 | **1128** | **24.1** | 1124 | 24.2 | 2 | **1124** | **24.2** | 1124 | 24.2 | 1124 | 24.2 |
| 416.gamess | 2 | 959 | 40.8 | 959 | 40.8 | **959** | **40.8** | 2 | 939 | 41.7 | 939 | 41.7 | **939** | **41.7** |
| 433.milc | 2 | 1117 | 16.4 | 1116 | 16.5 | **1116** | **16.5** | 2 | **1105** | **16.6** | 1105 | 16.6 | 1106 | 16.6 |
| 434.zeusmp | 2 | 603 | 30.2 | 600 | 30.3 | **601** | **30.3** | 2 | 583 | 31.2 | 582 | 31.2 | **583** | **31.2** |
| 435.gromacs | 2 | 395 | 36.2 | 395 | 36.2 | **395** | **36.2** | 2 | 394 | 36.3 | **392** | **36.4** | 392 | 36.4 |
| 436.cactusADM | 2 | 691 | 34.6 | **692** | **34.6** | 692 | 34.6 | 2 | 691 | 34.6 | **692** | **34.6** | 692 | 34.6 |
| 437.leslie3d | 2 | **1123** | **16.7** | 1121 | 16.8 | 1123 | 16.7 | 2 | 1121 | 16.8 | 1122 | 16.8 | **1121** | **16.8** |
| 444.namd | 2 | 520 | 30.9 | 520 | 30.9 | **520** | **30.9** | 2 | 515 | 31.2 | 512 | 31.4 | **512** | **31.4** |
| 447.dealII | 2 | **758** | **30.2** | 757 | 30.2 | 759 | 30.1 | 2 | **718** | **31.9** | 718 | 31.9 | 716 | 31.9 |
| 450.soplex | 2 | 891 | 18.7 | 883 | 18.9 | **883** | **18.9** | 2 | 882 | 18.9 | 878 | 19.0 | **878** | **19.0** |
| 453.povray | 2 | **247** | **43.1** | 247 | 43.1 | 247 | 43.1 | 2 | 198 | 53.7 | **198** | **53.8** | 198 | 53.8 |
| 454.calculix | 2 | 596 | 27.7 | 595 | 27.7 | **595** | **27.7** | 2 | 595 | 27.7 | 596 | 27.7 | **595** | **27.7** |
| 459.GemsFDTD | 2 | 1477 | 14.4 | **1475** | **14.4** | 1474 | 14.4 | 2 | 1477 | 14.4 | **1475** | **14.4** | 1474 | 14.4 |
| 465.tonto | 2 | 653 | 30.1 | **652** | **30.2** | 651 | 30.2 | 2 | 649 | 30.3 | 649 | 30.3 | **649** | **30.3** |
| 470.lbm | 2 | **1864** | **14.7** | 1864 | 14.7 | 1864 | 14.7 | 2 | 1865 | 14.7 | **1864** | **14.7** | 1864 | 14.7 |
| 481.wrf | 2 | 770 | 29.0 | **765** | **29.2** | 759 | 29.4 | 2 | 763 | 29.3 | **765** | **29.2** | 766 | 29.1 |
| 482.sphinx3 | 2 | **1334** | **29.2** | 1336 | 29.2 | 1331 | 29.3 | 2 | 1318 | 29.6 | 1309 | 29.8 | **1312** | **29.7** |

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: -D_Complex= -DSPEC_CPU_P64
434.zeusmp: -DSPEC_CPU_P64
435.gromacs: -D_Complex= -DSPEC_CPU_P64
436.cactusADM: -D_Complex= -DSPEC_CPU_P64 -Qlowercase /assume:underscore
437.leslie3d: -DSPEC_CPU_P64
444.namd: -DSPEC_CPU_P64 /TP
447.dealII: -D_Complex= -DSPEC_CPU_P64 -DBOOST_NO_INTRINSIC_WCHAR_T -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
450.soplex: -DSPEC_CPU_P64
453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
454.calculix: -D_Complex= -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER -Qlowercase
459.GemsFDTD: -DSPEC_CPU_P64
465.tonto: -DSPEC_CPU_P64
470.lbm: -D_Complex= -DSPEC_CPU_P64
481.wrf: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
482.sphinx3: -D_Complex= -DSPEC_CPU_P64

## Base Optimization Flags

C benchmarks:
-fast -Qauto_ilp32 /F950000000 shlW64M.lib
-link /FORCE:MULTIPLE

C++ benchmarks:
-fast -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:
-fast /F950000000 -link /FORCE:MULTIPLE

Benchmarks using both Fortran and C:
-fast -Qauto_ilp32 /F950000000 -link /FORCE:MULTIPLE

## Peak Compiler Invocation

C benchmarks:
```
icl -Qstd=c99
```

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: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qunroll2 -Oa -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

470.lbm: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qunroll2 -Qscalar-rep- -Qprefetch -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

482.sphinx3: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qunroll2 -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

C++ benchmarks:

444.namd: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Oa -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

447.dealII: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qprefetch -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

450.soplex: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

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# Peak Optimization Flags (Continued)

453.povray: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qansi-alias -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: ONESTEP -fast /F950000000 -link /FORCE:MULTIPLE

416.gamess: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep- /F950000000 -link /FORCE:MULTIPLE

434.zeusmp: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -QxT -O2 -Qprec-div- -Qunroll0 -Qscalar-rep- /F950000000 -link /FORCE:MULTIPLE

437.leslie3d: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast /F950000000 -link /FORCE:MULTIPLE

459.GemsFDTD: basepeak = yes

465.tonto: Same as 437.leslie3d

Benchmarks using both Fortran and C:

435.gromacs: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Oa -Qauto_ilp32 /F950000000 -link /FORCE:MULTIPLE

436.cactusADM: basepeak = yes

454.calculix: -fast -Qauto_ilp32 /F950000000 -link /FORCE:MULTIPLE

481.wrf: Same as 454.calculix

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/dell.ic10.windows.flags.html

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

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