# SPEC® CFP2006 Result

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## Dell Inc.

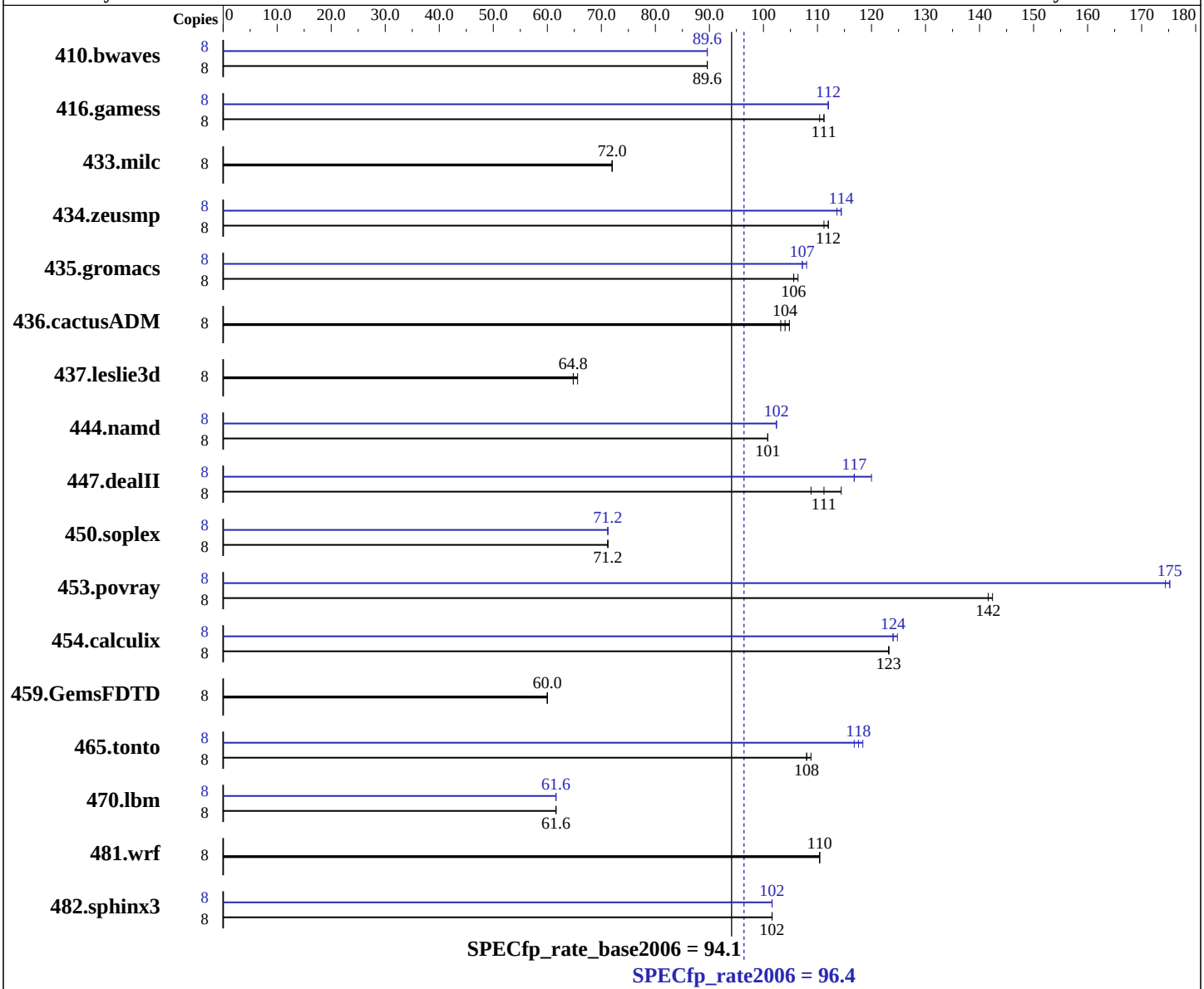
Dell Precision T3500 (Intel Xeon W3570, 3.20 GHz)

SPECfp®_rate2006 = 96.4

SPECfp_rate_base2006 = 94.1

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

**Test date:** Feb-2009
**Hardware Availability:** Apr-2009
**Software Availability:** Feb-2009




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon W3570 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.46 GHz |
| CPU MHz: | 3200 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 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 Business SP1 (64-bit) |
| Compiler: | Intel C++ Compiler for Intel 64, Version 11.0 Build 20090131 Package ID: w_cproc_p_11.0.072<br>Intel Visual Fortran Compiler for Intel 64, Version 11.0 Build 20090131 Package ID: w_cprof_p_11.0.072<br>Microsoft Visual Studio 2008 SP1 |
| Auto Parallel: | No |
| File System: | NTFS |

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6x4 GB DDR3-1333R, CL9)
Disk Subsystem: 1 x 250 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 8.1 for x64

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 8 | 1214 | 89.6 | **1212** | **89.6** | 1212 | 89.6 | 8 | **1213** | **89.6** | 1212 | 89.6 | 1214 | 89.6 |
| 416.gamess | 8 | 1409 | 111 | 1416 | 110 | **1409** | **111** | 8 | 1395 | 112 | **1396** | **112** | 1396 | 112 |
| 433.milc | 8 | 1014 | 72.0 | 1022 | 72.0 | **1020** | **72.0** | 8 | 1014 | 72.0 | 1022 | 72.0 | **1020** | **72.0** |
| 434.zeusmp | 8 | 653 | 111 | **652** | **112** | 651 | 112 | 8 | 636 | 114 | **638** | **114** | 640 | 114 |
| 435.gromacs | 8 | 537 | 106 | 540 | 106 | **539** | **106** | 8 | 530 | 108 | **532** | **107** | 532 | 107 |
| 436.cactusADM | 8 | 925 | 103 | **920** | **104** | 913 | 105 | 8 | 925 | 103 | **920** | **104** | 913 | 105 |
| 437.leslie3d | 8 | **1154** | **64.8** | 1154 | 64.8 | 1153 | 65.6 | 8 | **1154** | **64.8** | 1154 | 64.8 | 1153 | 65.6 |
| 444.namd | 8 | **639** | **101** | 639 | 101 | 639 | 101 | 8 | **627** | **102** | 625 | 102 | 627 | 102 |
| 447.dealII | 8 | 800 | 114 | **821** | **111** | 840 | 109 | 8 | 764 | 120 | 784 | 117 | **783** | **117** |
| 450.soplex | 8 | **937** | **71.2** | 936 | 71.2 | 937 | 71.2 | 8 | **935** | **71.2** | 935 | 71.2 | 935 | 71.2 |
| 453.povray | 8 | 299 | 142 | 301 | 142 | **300** | **142** | 8 | 243 | 175 | **243** | **175** | 244 | 174 |
| 454.calculix | 8 | 537 | 123 | 537 | 123 | **537** | **123** | 8 | 530 | 125 | **533** | **124** | 534 | 124 |
| 459.GemsFDTD | 8 | 1413 | 60.0 | **1411** | **60.0** | 1410 | 60.0 | 8 | 1413 | 60.0 | **1411** | **60.0** | 1410 | 60.0 |
| 465.tonto | 8 | 730 | 108 | 726 | 109 | **730** | **108** | 8 | 672 | 117 | **668** | **118** | 667 | 118 |
| 470.lbm | 8 | 1786 | 61.6 | 1786 | 61.6 | **1786** | **61.6** | 8 | 1786 | 61.6 | **1786** | **61.6** | 1786 | 61.6 |
| 481.wrf | 8 | 809 | 110 | **810** | **110** | 812 | 110 | 8 | 809 | 110 | **810** | **110** | 812 | 110 |
| 482.sphinx3 | 8 | 1534 | 102 | 1537 | 102 | **1536** | **102** | 8 | 1535 | 102 | 1536 | 102 | **1536** | **102** |

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

## Base 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
```

## Base Portability Flags

410.bwaves: -DSPEC_CPU_P64 /assume:underscore
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:
-QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch
/F512000000

C++ benchmarks:
-QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch
-Qcxx_features /F512000000 shlw64mt.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:
-QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch
/F1000000000

Benchmarks using both Fortran and C:
-QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch
/F1000000000

## Peak Compiler Invocation

C benchmarks:
icl -Qvc9 -Qstd=c99

C++ benchmarks:
icl -Qvc9

Continued on next page

## Peak Compiler Invocation (Continued)

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: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

482.sphinx3: -QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qunroll2 /F512000000

C++ benchmarks:

444.namd: -Qprof_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Oa /F512000000 shlw64mt.lib -link /FORCE:MULTIPLE

447.dealII: -Qprof_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qscalar-rep- /F512000000 shlw64mt.lib -link /FORCE:MULTIPLE

450.soplex: -Qprof_gen(pass 1) -QxSSE4.2 -Qauto-ilp32 -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- /F512000000 shlw64mt.lib -link /FORCE:MULTIPLE

453.povray: -Qprof_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias /F512000000 shlw64mt.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: -QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

Continued on next page

## Peak Optimization Flags (Continued)

416.gamess: -Qprof_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2)
-Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0
-Qansi-alias -Qscalar-rep- /F1000000000

434.zeusmp: -Qprof_gen(pass 1) -QxSSE4.2 -Qauto-ilp32
-Qprof_use(pass 2) -Qipo -O3 -Qprec-div- /F1000000000

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -Qprof_gen(pass 1) -QxSSE4.2(pass 2) -Qauto-ilp32(pass 2)
-Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qauto
/F1000000000

Benchmarks using both Fortran and C:

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

436.cactusADM: basepeak = yes

454.calculix: -QxSSE4.2 -Qauto-ilp32 -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/dell.ic11.0.windows.flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/dell.ic11.0.windows.flags.xml


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

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