



# SPEC® CFP2006 Result

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## Dell Inc.

### SPECf<sub>p</sub>\_rate2006 = 45.5

### Dell Precision M6400 (Intel QX9300, 2.53 GHz)

### SPECf<sub>p</sub>\_rate\_base2006 = 43.2

CPU2006 license: 55

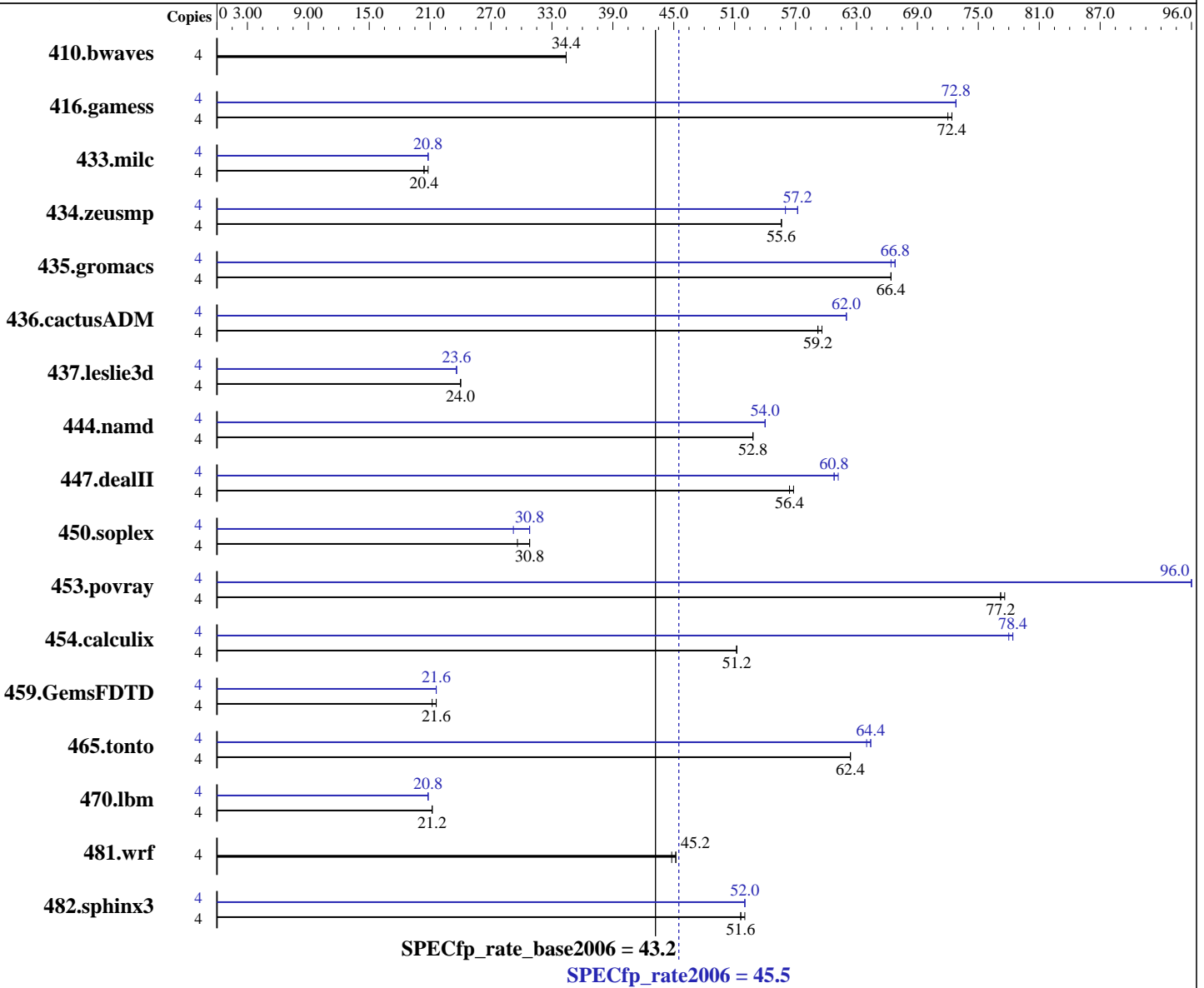
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Oct-2008

Hardware Availability: Sep-2008

Software Availability: Mar-2008



### Hardware

CPU Name: Intel Core 2 Extreme QX9300  
 CPU Characteristics: 1067 MHz Bus Speed  
 CPU MHz: 2530  
 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 Business SP1 (64bit)  
 Compiler: Intel C++ Compiler for Intel 64, Version 10.1  
 Build 20080312 Package ID: w\_cc\_p\_10.1.021  
 Intel Visual Fortran Compiler for Intel 64, Version 10.1  
 Build 20080312 Package ID: w\_fc\_p\_10.1.021  
 Microsoft Visual Studio 2005 SP1

Auto Parallel: No

File System: NTFS

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## Hardware (Continued)

## Software (Continued)

L3 Cache: None  
Other Cache: None  
Memory: 8 GB (4x2 GB 1067 MHz CL7 DDR3)  
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 8.1 for x64

## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	4	1587	34.4	1586	34.4	<b>1586</b>	<b>34.4</b>	4	1587	34.4	1586	34.4	<b>1586</b>	<b>34.4</b>		
416.gamess	4	1085	72.0	1084	72.4	<b>1084</b>	<b>72.4</b>	4	1077	72.8	<b>1077</b>	<b>72.8</b>	1077	72.8		
433.milc	4	1773	20.8	<b>1783</b>	<b>20.4</b>	1783	20.4	4	1753	20.8	<b>1759</b>	<b>20.8</b>	1764	20.8		
434.zeusmp	4	655	55.6	<b>654</b>	<b>55.6</b>	653	55.6	4	<b>635</b>	<b>57.2</b>	634	57.2	648	56.0		
435.gromacs	4	430	66.4	<b>429</b>	<b>66.4</b>	429	66.4	4	429	66.4	<b>429</b>	<b>66.8</b>	429	66.8		
436.cactusADM	4	<b>805</b>	<b>59.2</b>	806	59.2	803	59.6	4	771	62.0	773	62.0	<b>773</b>	<b>62.0</b>		
437.leslie3d	4	<b>1577</b>	<b>24.0</b>	1578	24.0	1575	24.0	4	<b>1592</b>	<b>23.6</b>	1592	23.6	1591	23.6		
444.namd	4	608	52.8	<b>606</b>	<b>52.8</b>	606	52.8	4	595	54.0	594	54.0	<b>594</b>	<b>54.0</b>		
447.dealII	4	814	56.4	<b>809</b>	<b>56.4</b>	807	56.8	4	754	60.8	748	61.2	<b>751</b>	<b>60.8</b>		
450.soplex	4	1120	29.6	1085	30.8	<b>1086</b>	<b>30.8</b>	4	1136	29.2	<b>1090</b>	<b>30.8</b>	1082	30.8		
453.povray	4	<b>275</b>	<b>77.2</b>	276	77.2	275	77.6	4	<b>222</b>	<b>96.0</b>	222	96.0	222	96.0		
454.calculix	4	643	51.2	643	51.2	<b>643</b>	<b>51.2</b>	4	<b>421</b>	<b>78.4</b>	424	78.0	421	78.4		
459.GemsFDTD	4	1983	21.2	1972	21.6	<b>1972</b>	<b>21.6</b>	4	1948	21.6	<b>1948</b>	<b>21.6</b>	1948	21.6		
465.tonto	4	<b>630</b>	<b>62.4</b>	630	62.4	630	62.4	4	<b>612</b>	<b>64.4</b>	610	64.4	613	64.0		
470.lbm	4	<b>2576</b>	<b>21.2</b>	2576	21.2	2576	21.2	4	<b>2635</b>	<b>20.8</b>	2634	20.8	2635	20.8		
481.wrf	4	987	45.2	<b>990</b>	<b>45.2</b>	998	44.8	4	987	45.2	<b>990</b>	<b>45.2</b>	998	44.8		
482.sphinx3	4	1516	51.6	1504	52.0	<b>1507</b>	<b>51.6</b>	4	1503	52.0	<b>1495</b>	<b>52.0</b>	1494	52.0		

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)

## Compiler Invocation

C benchmarks:  
icl -Qstd=c99

C++ benchmarks:  
icl

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## Compiler Invocation (Continued)

Fortran benchmarks:  
ifort

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

## 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 /F512000000 -link /FORCE:MULTIPLE

C++ benchmarks:  
-fast -Qauto-ilp32 -Qcxx\_features /F512000000 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



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## Peak Optimization Flags

### C benchmarks:

433.milc: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast -Qauto-ilp32  
-Qunroll2 -Oa /F512000000 -link /FORCE:MULTIPLE

470.lbm: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast -Qauto-ilp32  
-Qunroll2 -Qscalar-rep- -Qprefetch /F512000000  
-link /FORCE:MULTIPLE

482.sphinx3: -fast -Qauto-ilp32 -Qunroll2 /F512000000  
-link /FORCE:MULTIPLE

### C++ benchmarks:

444.namd: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast -Qauto-ilp32  
-Oa -Qcxx\_features /F512000000 shlw64m.lib  
-link /FORCE:MULTIPLE

447.dealII: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast -Qauto-ilp32  
-Qunroll2 -Qprefetch -Qcxx\_features /F512000000  
shlw64m.lib -link /FORCE:MULTIPLE

450.soplex: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast -Qauto-ilp32  
-Qcxx\_features /F512000000 shlw64m.lib  
-link /FORCE:MULTIPLE

453.povray: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast -Qauto-ilp32  
-Qunroll4 -Qansi-alias -Qcxx\_features /F512000000  
shlw64m.lib -link /FORCE:MULTIPLE

### 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-  
-Qunroll10 -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

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## Peak Optimization Flags (Continued)

```
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.20090713.00.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.20090713.00.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
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