SPEC® CFP2006 Result

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Dell Inc.

Dell Precision T7400 (Intel Xeon X5492, 3.40 GHz)

$SPECfp^{®}2006 =$ 26.5

$SPECfp\_base2006 =$ 25.8

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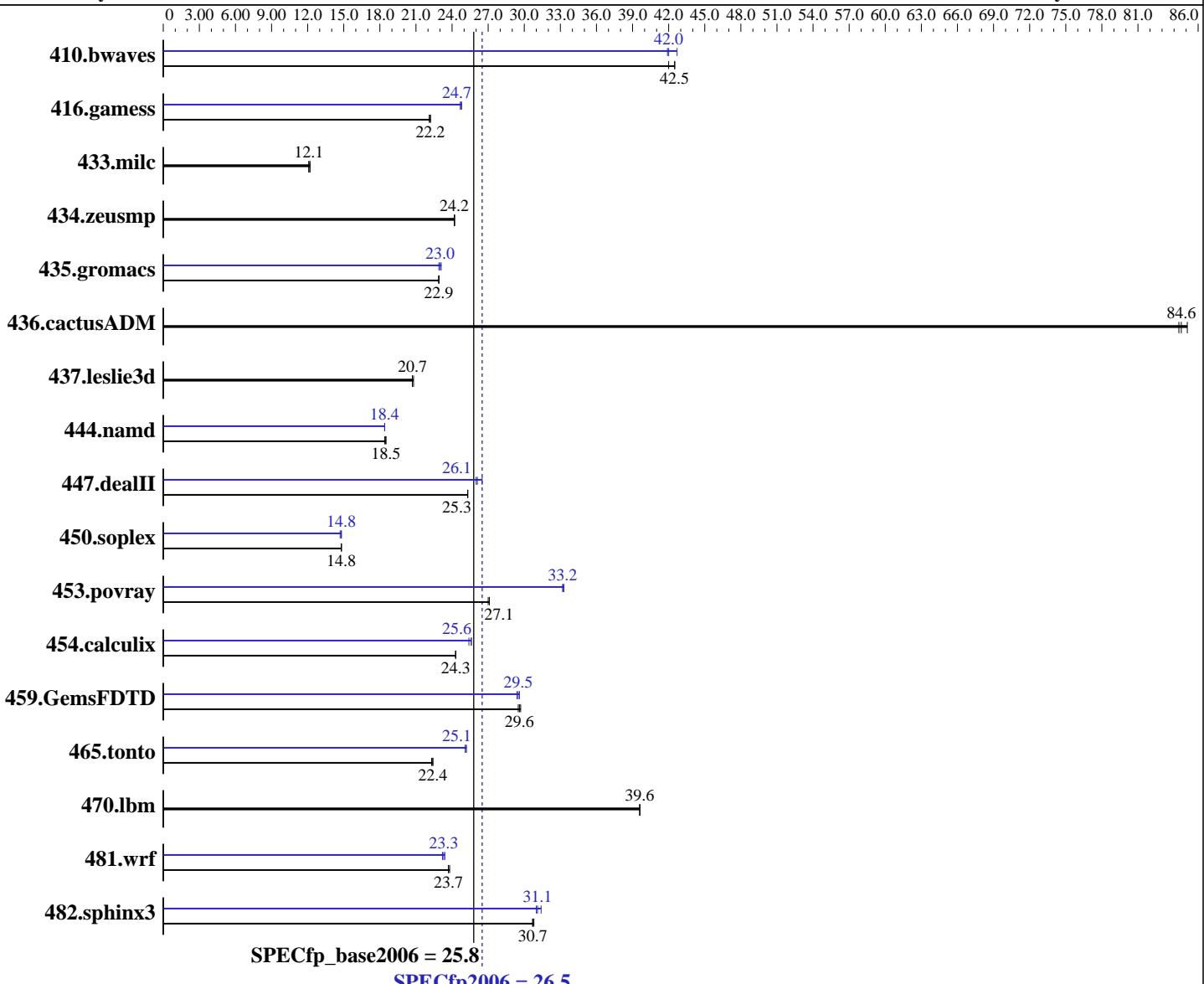**Test sponsor:** Dell Inc.
Tested by: Dell Inc.

Test date: Nov-2008
Hardware Availability: Sep-2008
Software Availability: Nov-2008

Benchmark	Base	Peak
410.bwaves	42.5	42.0
416.gamess	22.2	24.7
433.milc	12.1	
434.zeusmp	24.2	
435.gromacs	22.9	23.0
436.cactusADM	84.6	
437.leslie3d	20.7	
444.namd	18.5	18.4
447.dealII	25.3	26.1
450.soplex	14.8	14.8
453.povray	27.1	33.2
454.calculix	24.3	25.6
459.GemsFDTD	29.6	29.5
465.tonto	22.4	25.1
470.lbm	39.6	
481.wrf	23.7	23.3
482.sphinx3	30.7	31.1

SPECfp_base2006 = 25.8
SPECfp2006 = 26.5

Hardware

CPU Name:	Intel Xeon X5492
CPU Characteristics:	1600 MHz Bus Speed
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
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

Continued on next page

Software

Operating System:	Windows Vista Business SP1 (64-bit)
Compiler:	Intel C++ Compiler for Intel 64, Version 11.0 Build 20080930 Package ID: w_cproc_p_11.0.061 Intel Visual Fortran Compiler for Intel 64, Version 11.0 Build 20080930 Package ID: w_cprof_p_11.0.061 Microsoft Visual Studio 2008 SP1
Auto Parallel:	Yes
File System:	NTFS

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L3 Cache:	None	System State:	Default
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	16 GB (8x2 GB DDR2-800 FB-DIMM, CL5)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x 80 GB SATA 7200 RPM	Other Software:	MicroQuill SmartHeap Library 8.1 for x64
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**320**	**42.5**	319	42.5	323	42.0	318	42.7	**324**	**42.0**	325	41.9
416.gamess	884	22.1	882	22.2	**883**	**22.2**	790	24.8	**793**	**24.7**	794	24.7
433.milc	**758**	**12.1**	758	12.1	755	12.2	**758**	**12.1**	758	12.1	755	12.2
434.zeusmp	**376**	**24.2**	375	24.2	377	24.2	**376**	**24.2**	375	24.2	377	24.2
435.gromacs	311	22.9	311	22.9	**311**	**22.9**	309	23.1	**310**	**23.0**	311	22.9
436.cactusADM	140	85.1	**141**	**84.6**	142	84.4	140	85.1	**141**	**84.6**	142	84.4
437.leslie3d	**453**	**20.7**	453	20.8	454	20.7	**453**	**20.7**	453	20.8	454	20.7
444.namd	435	18.4	434	18.5	**434**	**18.5**	**436**	**18.4**	437	18.4	436	18.4
447.dealII	452	25.3	452	25.3	**452**	**25.3**	432	26.5	**439**	**26.1**	441	26.0
450.soplex	**565**	**14.8**	565	14.8	564	14.8	566	14.7	562	14.8	**563**	**14.8**
453.povray	197	27.1	197	27.0	**197**	**27.1**	**160**	**33.2**	160	33.2	160	33.3
454.calculix	**339**	**24.3**	339	24.3	340	24.3	**323**	**25.6**	325	25.4	322	25.6
459.GemsFDTD	**358**	**29.6**	360	29.5	358	29.7	**360**	**29.5**	359	29.6	361	29.4
465.tonto	442	22.3	440	22.4	**440**	**22.4**	391	25.2	**392**	**25.1**	392	25.1
470.lbm	347	39.6	347	39.6	**347**	**39.6**	347	39.6	347	39.6	**347**	**39.6**
481.wrf	470	23.8	472	23.7	**471**	**23.7**	478	23.4	**479**	**23.3**	481	23.2
482.sphinx3	**635**	**30.7**	635	30.7	633	30.8	**627**	**31.1**	622	31.4	629	31.0

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)

  BIOS Settings
    Adjacent Cache Line Prefetch set to ON
```

Base Compiler Invocation

C benchmarks:
```
     icl -Qvc9 -Qstd=c99
```

C++ benchmarks:
```
     icl -Qvc9
```

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Base Compiler Invocation (Continued)

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:
```
-QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qparallel
-Qopt-prefetch /F512000000
```

C++ benchmarks:
```
-QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qparallel
-Qopt-prefetch -Qcxx_features /F512000000 shlw64m.lib
          -link /FORCE:MULTIPLE
```

Fortran benchmarks:
```
-QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qparallel
-Qopt-prefetch /F1000000000
```

Benchmarks using both Fortran and C:
```
-QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qparallel
-Qopt-prefetch /F1000000000
```

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Peak 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
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

```
  433.milc: basepeak = yes

   470.lbm: basepeak = yes

482.sphinx3: -QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- -Qunroll2
             /F512000000
```

C++ benchmarks:

```
  444.namd: -Qprof_gen(pass 1) -QxSSE4.1(pass 2) -Qauto-ilp32(pass 2)
            -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Oa /F512000000
            shlw64m.lib          -link /FORCE:MULTIPLE

 447.dealII: -Qprof_gen(pass 1) -QxSSE4.1(pass 2) -Qauto-ilp32(pass 2)
            -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2
            -Qopt-prefetch -Qansi-alias -Qscalar-rep- /F512000000
            shlw64m.lib          -link /FORCE:MULTIPLE

 450.soplex: -Qprof_gen(pass 1) -QxSSE4.1 -Qauto-ilp32
            -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- /F512000000
            shlw64m.lib          -link /FORCE:MULTIPLE

 453.povray: -Qprof_gen(pass 1) -QxSSE4.1(pass 2) -Qauto-ilp32(pass 2)
            -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4
            -Qansi-alias /F512000000 shlw64m.lib
                    -link /FORCE:MULTIPLE
```

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Peak Optimization Flags (Continued)

Fortran benchmarks:

```
410.bwaves: -QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div-
            -Qopt-prefetch -Qparallel /F1000000000

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

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -Qprof_gen(pass 1) -QxSSE4.1(pass 2) -Qauto-ilp32(pass 2)
            -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0
            -Qopt-prefetch -Qparallel /F1000000000

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

436.cactusADM: basepeak = yes

454.calculix: -QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div- /F1000000000

481.wrf: -QxSSE4.1 -Qauto-ilp32 -Qipo -O3 -Qprec-div-
            -Qopt-prefetch -Qparallel /F1000000000
```

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 questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 21:34:05 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 24 December 2008.