SPEC® CFP2006 Result

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Dell Inc.

Dell Precision T7500 (Intel Xeon W5580, 3.20 GHz)

$SPECfp^{®}2006 =$ 37.8

$SPECfp\_base2006 =$ 36.3

CPU2006 license: 55	**Test date:** Mar-2009
Test sponsor: Dell Inc.	**Hardware Availability:** Apr-2009
Tested by: Dell Inc.	**Software Availability:** Feb-2009

410.bwaves 80.8 / 80.8
416.gamess 27.5 / 25.1
433.milc 29.1
434.zeusmp 32.9
435.gromacs 25.3 / 25.1
436.cactusADM 97.4 / 98.8
437.leslie3d 34.3
444.namd 20.5 / 20.5
447.dealII 30.0 / 28.5
450.soplex 29.4 / 29.6
453.povray 39.0 / 31.1
454.calculix 30.2 / 28.9
459.GemsFDTD 45.0 / 42.7
465.tonto 31.9 / 27.2
470.lbm 57.8
481.wrf 43.8 / 43.5
482.sphinx3 46.6 / 45.0

SPECfp_base2006 = 36.3

SPECfp2006 = 37.8

Hardware

CPU Name:	Intel Xeon W5580
CPU Characteristics:	Intel Turbo Boost Technology up to 3.46 GHz
CPU MHz:	3200
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:	256 KB I+D on chip per core

Continued on next page

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 Intel Visual Fortran Compiler for Intel 64, Version 11.0 Build 20090131 Package ID: w_cprof_p_11.0.072 Microsoft Visual Studio 2008 SP1
Auto Parallel:	Yes
File System:	NTFS

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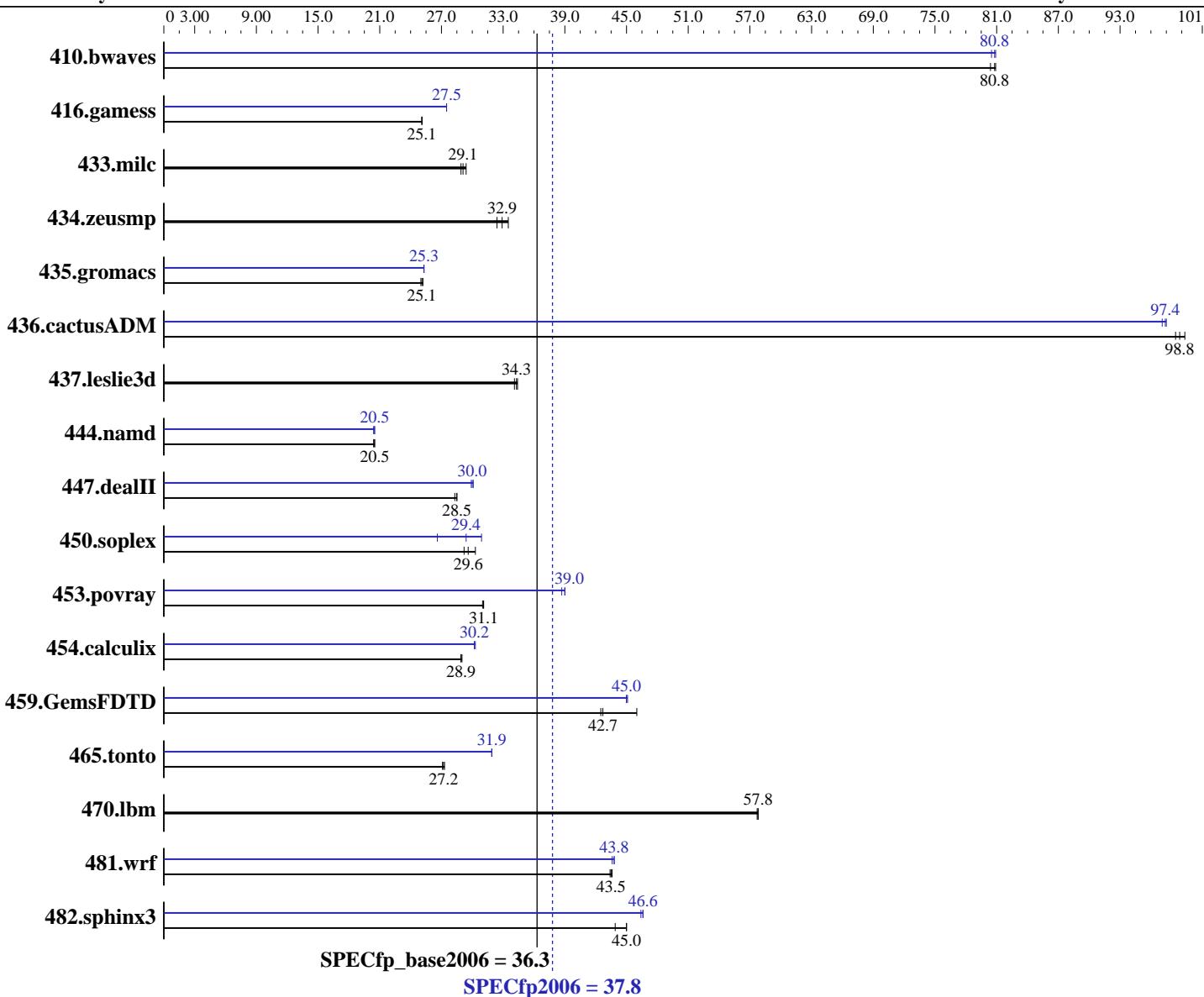|	
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L3 Cache:	8 MB I+D on chip per chip	System State:	Default
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	24 GB (6x4 GB DDR3-1333R, ECC, CL9)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x 146 GB SAS 15000 RPM	Other Software:	MicroQuill SmartHeap 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	168	80.9	169	80.4	**168**	**80.8**	169	80.5	**168**	**80.8**	168	80.9
416.gamess	**780**	**25.1**	780	25.1	781	25.1	712	27.5	713	27.5	**713**	**27.5**
433.milc	**316**	**29.1**	318	28.9	313	29.4	**316**	**29.1**	318	28.9	313	29.4
434.zeusmp	272	33.5	**277**	**32.9**	281	32.4	272	33.5	**277**	**32.9**	281	32.4
435.gromacs	285	25.0	**285**	**25.1**	284	25.2	282	25.3	282	25.3	**282**	**25.3**
436.cactusADM	122	98.4	120	99.3	**121**	**98.8**	123	97.1	**123**	**97.4**	123	97.5
437.leslie3d	**274**	**34.3**	273	34.4	276	34.1	**274**	**34.3**	273	34.4	276	34.1
444.namd	393	20.4	391	20.5	**391**	**20.5**	392	20.5	393	20.4	**392**	**20.5**
447.dealII	402	28.5	405	28.3	**402**	**28.5**	**382**	**30.0**	380	30.1	382	29.9
450.soplex	286	29.2	**282**	**29.6**	275	30.3	313	26.6	**283**	**29.4**	270	30.9
453.povray	171	31.1	**171**	**31.1**	172	31.0	137	38.7	136	39.0	**136**	**39.0**
454.calculix	285	29.0	**285**	**28.9**	286	28.9	274	30.2	273	30.3	**273**	**30.2**
459.GemsFDTD	231	46.0	250	42.5	**248**	**42.7**	**236**	**45.0**	236	45.0	235	45.1
465.tonto	363	27.1	360	27.3	**362**	**27.2**	309	31.9	**309**	**31.9**	308	31.9
470.lbm	238	57.7	**238**	**57.8**	238	57.8	238	57.7	**238**	**57.8**	238	57.8
481.wrf	**257**	**43.5**	256	43.6	258	43.4	256	43.6	**255**	**43.8**	255	43.8
482.sphinx3	444	43.9	**434**	**45.0**	433	45.0	418	46.6	420	46.4	**418**	**46.6**

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

Platform Notes

```
   BIOS Settings
     Memory Node Interleaving set to NUMA.
```

General Notes

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

Base Compiler Invocation

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

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Base Compiler Invocation (Continued)

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- -Qparallel
-Qopt-prefetch /F512000000
```

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

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

Benchmarks using both Fortran and C:
```
-QxSSE4.2 -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: `-QxSSE4.2 -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`
           `-Qopt-prefetch -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`

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Peak Optimization Flags (Continued)

Fortran benchmarks:

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

   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: basepeak = yes

   437.leslie3d: basepeak = yes

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

   454.calculix: -QxSSE4.2 -Qauto-ilp32 -Qipo -O3 -Qprec-div- /F1000000000

      481.wrf: -QxSSE4.2 -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.20090710.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.20090710.xml

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

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