# SPEC® CFP2006 Result
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## Dell Inc.

Dell Precision T7500 (Intel Xeon W5580, 3.20 GHz)

$SPECfp®\_rate2006 = \quad 192$

$SPECfp\_rate\_base2006 = \quad 185$
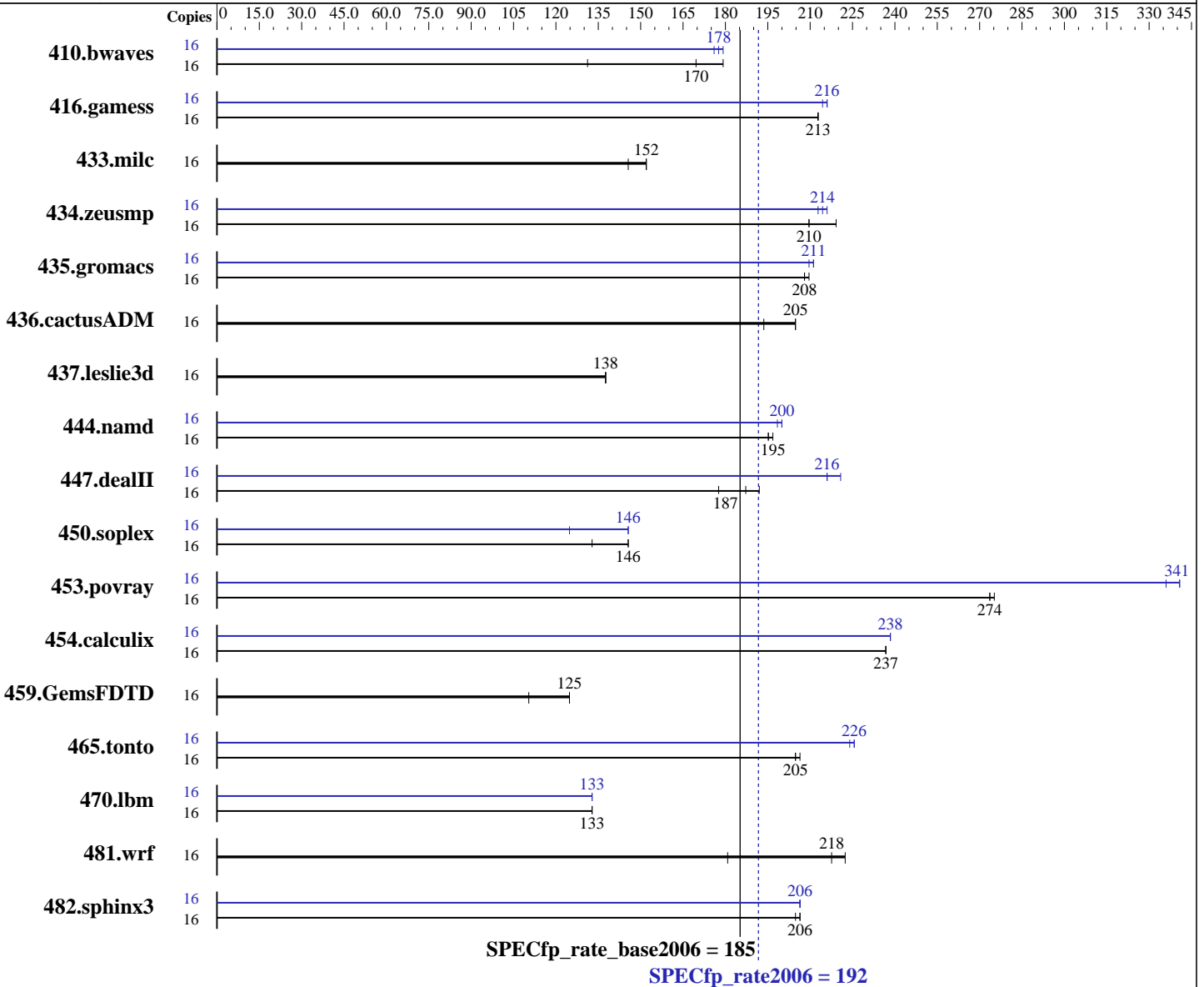
**CPU2006 license:** 55
**Test sponsor:** Dell Inc.
**Tested by:** Dell Inc.

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

| Copies | | | |
|---|---|---|---|
| 410.bwaves | 16 | 178 | |
| | 16 | 170 | |
| 416.gamess | 16 | 216 | |
| | 16 | 213 | |
| 433.milc | 16 | 152 | |
| 434.zeusmp | 16 | 214 | |
| | 16 | 210 | |
| 435.gromacs | 16 | 211 | |
| | 16 | 208 | |
| 436.cactusADM | 16 | 205 | |
| 437.leslie3d | 16 | 138 | |
| 444.namd | 16 | 200 | |
| | 16 | 195 | |
| 447.dealII | 16 | 216 | |
| | 16 | 187 | |
| 450.soplex | 16 | 146 | |
| | 16 | 146 | |
| 453.povray | 16 | 341 | |
| | 16 | 274 | |
| 454.calculix | 16 | 238 | |
| | 16 | 237 | |
| 459.GemsFDTD | 16 | 125 | |
| 465.tonto | 16 | 226 | |
| | 16 | 205 | |
| 470.lbm | 16 | 133 | |
| | 16 | 133 | |
| 481.wrf | 16 | 218 | |
| 482.sphinx3 | 16 | 206 | |
| | 16 | 206 | |

**SPECfp_rate_base2006 = 185**

**SPECfp_rate2006 = 192**

## 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, 2 threads/core
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: No
File System: NTFS

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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 Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Peak Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 410.bwaves | 16 | 1662 | 131 | 1218 | 179 | **1288** | **170** | 16 | 1240 | 176 | **1221** | **178** | 1213 | 179 |
| 416.gamess | 16 | **1475** | **213** | 1472 | 213 | 1477 | 213 | 16 | **1453** | **216** | 1463 | 214 | 1451 | 216 |
| 433.milc | 16 | 1014 | 146 | 963 | 152 | **963** | **152** | 16 | 1014 | 146 | 963 | 152 | **963** | **152** |
| 434.zeusmp | 16 | 694 | 210 | 662 | 219 | **692** | **210** | 16 | **681** | **214** | 683 | 213 | 675 | 216 |
| 435.gromacs | 16 | 547 | 210 | **550** | **208** | 550 | 208 | 16 | 544 | 210 | **543** | **211** | 539 | 211 |
| 436.cactusADM | 16 | **934** | **205** | 984 | 194 | 930 | 205 | 16 | **934** | **205** | 984 | 194 | 930 | 205 |
| 437.leslie3d | 16 | 1096 | 138 | 1097 | 138 | **1097** | **138** | 16 | 1096 | 138 | 1097 | 138 | **1097** | **138** |
| 444.namd | 16 | 656 | 195 | 655 | 197 | **655** | **195** | 16 | 642 | 200 | 646 | 198 | **643** | **200** |
| 447.dealII | 16 | 1033 | 178 | **977** | **187** | 954 | 192 | 16 | 848 | 216 | 829 | 221 | **847** | **216** |
| 450.soplex | 16 | 1010 | 133 | 916 | 146 | **917** | **146** | 16 | 1075 | 125 | **914** | **146** | 914 | 146 |
| 453.povray | 16 | **311** | **274** | 309 | 275 | 311 | 274 | 16 | 253 | 336 | **250** | **341** | 250 | 341 |
| 454.calculix | 16 | 558 | 237 | 558 | 237 | **558** | **237** | 16 | 552 | 238 | 553 | 238 | **552** | **238** |
| 459.GemsFDTD | 16 | 1547 | 110 | **1367** | **125** | 1361 | 125 | 16 | 1547 | 110 | **1367** | **125** | 1361 | 125 |
| 465.tonto | 16 | **767** | **205** | 771 | 205 | 763 | 206 | 16 | 703 | 224 | **698** | **226** | 698 | 226 |
| 470.lbm | 16 | **1654** | **133** | 1654 | 133 | 1654 | 133 | 16 | **1654** | **133** | 1654 | 133 | 1655 | 133 |
| 481.wrf | 16 | 988 | 181 | **819** | **218** | 801 | 222 | 16 | 988 | 181 | **819** | **218** | 801 | 222 |
| 482.sphinx3 | 16 | 1518 | 205 | **1512** | **206** | 1511 | 206 | 16 | 1516 | 206 | 1510 | 206 | **1512** | **206** |

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

## Submit Notes

```
    The config file option 'submit' was used.
```

## Platform Notes

```
   BIOS Settings
     Memory Node Interleaving set to NUMA.
     Hyper-Threading Technology set to ON.
```

## General Notes

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

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# 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

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# Base Optimization Flags (Continued)

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
```

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`

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# Peak Optimization Flags (Continued)

```
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

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.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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