# SPEC® CFP2006 Result

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## Dell Inc.

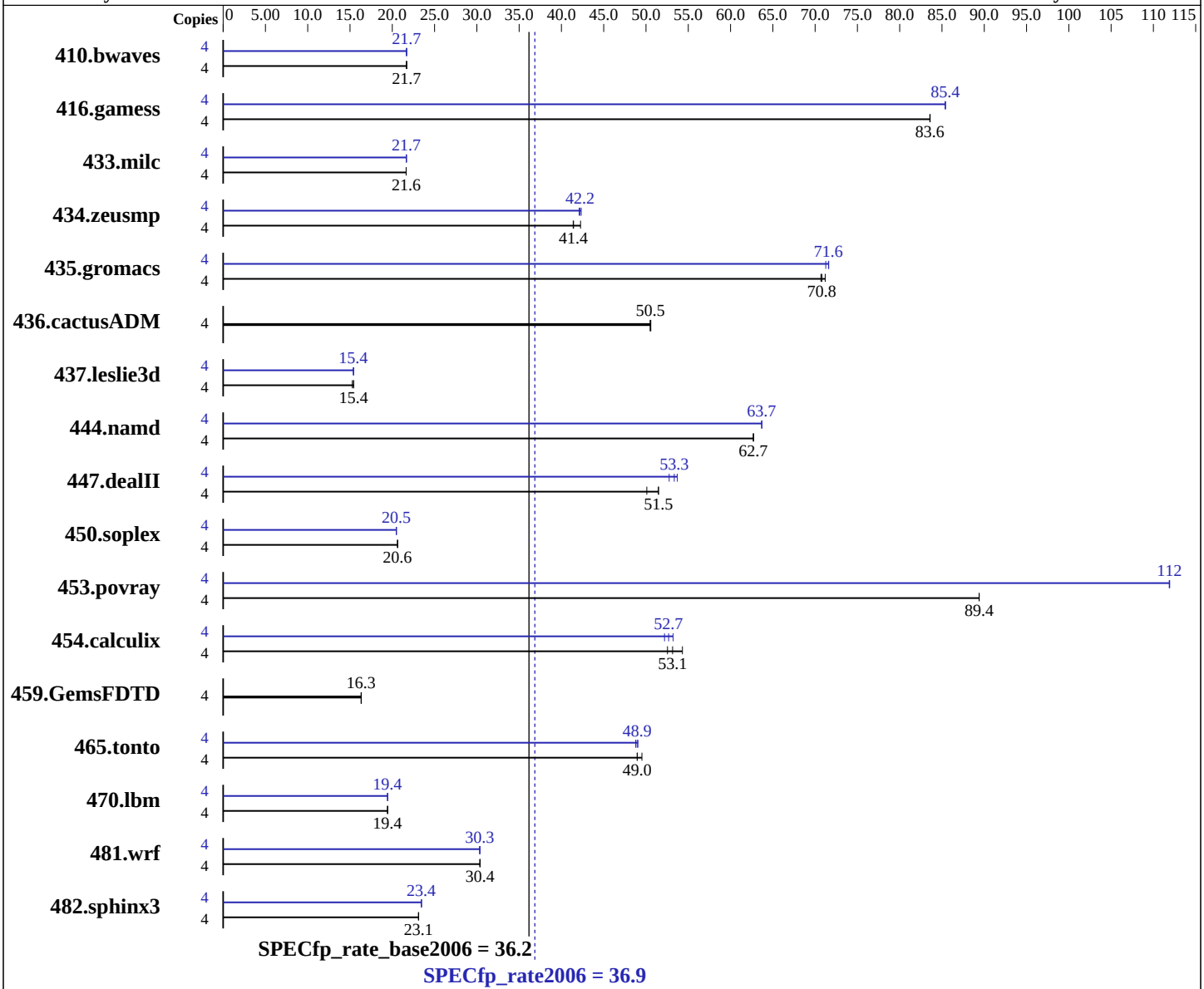
Dell Precision 690 (Intel Xeon X5365, 3.00 GHz)

SPECfp®_rate2006 = 36.9

SPECfp_rate_base2006 = 36.2

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

**Test date:** Jul-2007
**Hardware Availability:** Aug-2007
**Software Availability:** Jun-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5365 |
| CPU Characteristics: | 1333 MHz Bus Speed |
| CPU MHz: | 3000 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 8 MB I+D on chip per chip, 4 MB shared / 2 cores |

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### Software

| | |
|---|---|
| Operating System: | Windows XP Professional x64 Edition SP2 |
| Compiler: | Intel C++ Compiler for Intel 64, Version 10.0 Build 20070426 Package ID: W_CC_P_10.0.025<br>Intel Visual Fortran Compiler for Intel 64, Version 10.0 Build 20070426 Package ID: W_FC_P_10.0.025<br>Microsoft Visual Studio 2005 SP1 |
| Auto Parallel: | No |
| File System: | NTFS |

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| | |
|---|---|
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8x2 GB 667 MHz ECC CL5 FB-DIMM) |
| Disk Subsystem: | 1 x 73GB SAS 10K RPM |
| Other Hardware: | None |

| | |
|---|---|
| System State: | Default |
| Base Pointers: | 32/64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | MicroQuill SmartHeap Library 8.0 for x64 |

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | 2505 | 21.7 | 2509 | 21.7 | **2506** | **21.7** | 4 | 2504 | 21.7 | 2509 | 21.7 | **2507** | **21.7** |
| 416.gamess | 4 | 937 | 83.6 | **937** | **83.6** | 937 | 83.6 | 4 | **917** | **85.4** | 917 | 85.4 | 917 | 85.4 |
| 433.milc | 4 | **1697** | **21.6** | 1697 | 21.6 | 1696 | 21.6 | 4 | 1693 | 21.7 | **1695** | **21.7** | 1696 | 21.7 |
| 434.zeusmp | 4 | 879 | 41.4 | **878** | **41.4** | 861 | 42.3 | 4 | 865 | 42.1 | 860 | 42.3 | **862** | **42.2** |
| 435.gromacs | 4 | **403** | **70.8** | 401 | 71.2 | 404 | 70.7 | 4 | 401 | 71.3 | **399** | **71.6** | 399 | 71.6 |
| 436.cactusADM | 4 | **946** | **50.5** | 945 | 50.6 | 947 | 50.5 | 4 | **946** | **50.5** | 945 | 50.6 | 947 | 50.5 |
| 437.leslie3d | 4 | 2437 | 15.4 | 2462 | 15.3 | **2438** | **15.4** | 4 | 2442 | 15.4 | **2441** | **15.4** | 2437 | 15.4 |
| 444.namd | 4 | 512 | 62.7 | 512 | 62.7 | **512** | **62.7** | 4 | **504** | **63.7** | 504 | 63.7 | 504 | 63.7 |
| 447.dealII | 4 | **889** | **51.5** | 889 | 51.5 | 913 | 50.1 | 4 | 868 | 52.7 | 852 | 53.7 | **858** | **53.3** |
| 450.soplex | 4 | 1618 | 20.6 | **1617** | **20.6** | 1617 | 20.6 | 4 | 1629 | 20.5 | **1629** | **20.5** | 1628 | 20.5 |
| 453.povray | 4 | 238 | 89.4 | **238** | **89.4** | 238 | 89.4 | 4 | **190** | **112** | 190 | 112 | 190 | 112 |
| 454.calculix | 4 | **621** | **53.1** | 608 | 54.3 | 628 | 52.5 | 4 | **626** | **52.7** | 620 | 53.2 | 632 | 52.2 |
| 459.GemsFDTD | 4 | **2599** | **16.3** | 2598 | 16.3 | 2603 | 16.3 | 4 | **2599** | **16.3** | 2598 | 16.3 | 2603 | 16.3 |
| 465.tonto | 4 | 804 | 49.0 | 795 | 49.5 | **804** | **49.0** | 4 | **804** | **48.9** | 807 | 48.8 | 803 | 49.0 |
| 470.lbm | 4 | 2826 | 19.4 | 2826 | 19.4 | **2826** | **19.4** | 4 | 2826 | 19.4 | **2827** | **19.4** | 2827 | 19.4 |
| 481.wrf | 4 | **1471** | **30.4** | 1472 | 30.4 | 1471 | 30.4 | 4 | 1473 | 30.3 | **1473** | **30.3** | 1472 | 30.4 |
| 482.sphinx3 | 4 | 3376 | 23.1 | 3372 | 23.1 | **3374** | **23.1** | 4 | 3326 | 23.4 | 3324 | 23.5 | **3326** | **23.4** |

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
  Snoop Filter                 : OFF
  Adjacent Cache Line Prefetch : OFF
  Hardware Prefetcher          : OFF

  Snoop Filter
    Preserves cache coherency while minimizing snoops
    to remote nodes.

  Adjacent Cache Line Prefetch
    Prefetch data in order to shorten execution cycles
    and maximize data processing efficiency.
```

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## General Notes (Continued)

```
    Optimization for high-frequency FSB applicatons: ON
```

## Base Compiler Invocation

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

C++ benchmarks:
```
icl
```

Fortran benchmarks:
```
ifort
```

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

## Base Portability Flags

```
    410.bwaves: -DSPEC_CPU_P64
    416.gamess: -DSPEC_CPU_P64
      433.milc: -D_Complex= -DSPEC_CPU_P64
    434.zeusmp: -DSPEC_CPU_P64
    435.gromacs: -D_Complex= -DSPEC_CPU_P64
436.cactusADM: -D_Complex= -DSPEC_CPU_P64 -Qlowercase /assume:underscore
    437.leslie3d: -DSPEC_CPU_P64
      444.namd: -DSPEC_CPU_P64 /TP
     447.dealII: -D_Complex= -DSPEC_CPU_P64 -DBOOST_NO_INTRINSIC_WCHAR_T
                 -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
     450.soplex: -DSPEC_CPU_P64
     453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
    454.calculix: -D_Complex= -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER
                 -Qlowercase
459.GemsFDTD: -DSPEC_CPU_P64
       465.tonto: -DSPEC_CPU_P64
        470.lbm: -D_Complex= -DSPEC_CPU_P64
        481.wrf: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
    482.sphinx3: -D_Complex= -DSPEC_CPU_P64
```

## Base Optimization Flags

C benchmarks:
```
    -fast -Qauto_ilp32 /F950000000 shlW64M.lib
                -link /FORCE:MULTIPLE
```

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## Base Optimization Flags (Continued)

C++ benchmarks:
```
-fast -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib
              -link /FORCE:MULTIPLE
```

Fortran benchmarks:
```
-fast /F950000000            -link /FORCE:MULTIPLE
```

Benchmarks using both Fortran and C:
```
-fast -Qauto_ilp32 /F950000000            -link /FORCE:MULTIPLE
```

## Peak Compiler Invocation

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

C++ benchmarks:
```
icl
```

Fortran benchmarks:
```
ifort
```

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

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast
-Qunroll2 -Oa -Qauto_ilp32 /F950000000 shlW64M.lib
-link /FORCE:MULTIPLE

470.lbm: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast
-Qunroll2 -Qscalar-rep- -Qprefetch -Qauto_ilp32
/F950000000 shlW64M.lib -link /FORCE:MULTIPLE

482.sphinx3: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast
-Qunroll2 -Qauto_ilp32 /F950000000 shlW64M.lib
-link /FORCE:MULTIPLE

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# Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Oa -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

447.dealII: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qprefetch -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

450.soplex: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

453.povray: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qansi-alias -Qcxx_features -Qauto_ilp32 /F950000000 shlW64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: ONESTEP -fast /F950000000 -link /FORCE:MULTIPLE

416.gamess: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep- /F950000000 -link /FORCE:MULTIPLE

434.zeusmp: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -QxT -O2 -Qprec-div- -Qunroll0 -Qscalar-rep- /F950000000 -link /FORCE:MULTIPLE

437.leslie3d: ONESTEP -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast /F950000000 -link /FORCE:MULTIPLE

459.GemsFDTD: basepeak = yes

465.tonto: Same as 437.leslie3d

Benchmarks using both Fortran and C:

435.gromacs: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Oa -Qauto_ilp32 /F950000000 -link /FORCE:MULTIPLE

436.cactusADM: basepeak = yes

454.calculix: -fast -Qauto_ilp32 /F950000000 -link /FORCE:MULTIPLE

481.wrf: Same as 454.calculix

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/dell.ic10.windows.flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/dell.ic10.windows.flags.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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