



SPEC® CFP2006 Result

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Dell Inc.

SPECfp®2006 = 22.2

Dell Precision T7400 (Intel Xeon X5272, 3.40 GHz)

SPECfp_base2006 = 19.9

CPU2006 license: 55

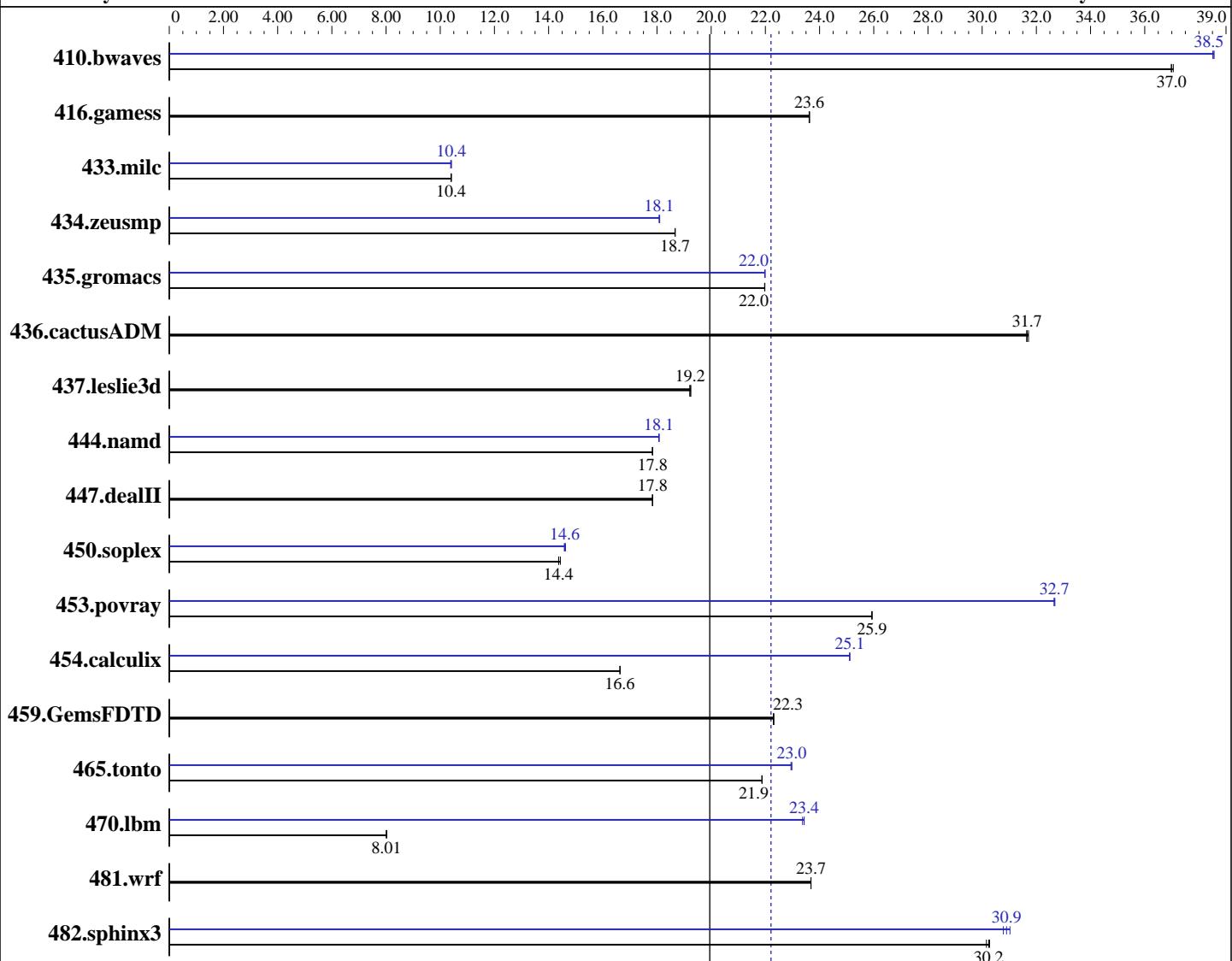
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Dec-2007

Hardware Availability: Jan-2008

Software Availability: Nov-2007



| Hardware | | Software | |
|----------------------|------------------------------------|-------------------|---|
| CPU Name: | Intel Xeon X5272 | Operating System: | Windows XP Professional x64 Edition SP2 |
| CPU Characteristics: | 1600 MHz Bus Speed | Compiler: | Intel C++ Compiler for Intel 64, Version 10.1 |
| CPU MHz: | 3400 | | Build 20070809 Package ID: w_cc_p_10.1.011 |
| FPU: | Integrated | | Intel Visual Fortran Compiler for Intel 64, |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip | | Version 10.0 |
| CPU(s) orderable: | 1,2 chips | | Build 20070809 Package ID: w_fc_p_10.1.011 |
| Primary Cache: | 32 KB I + 32 KB D on chip per core | Auto Parallel: | Microsoft Visual Studio 2005 SP1 |
| Secondary Cache: | 6 MB I+D on chip per chip | File System: | Yes NTFS |

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| | | | |
|-----------------|-----------------------------------|-----------------|--|
| L3 Cache: | None | System State: | Default |
| Other Cache: | None | Base Pointers: | 32/64-bit |
| Memory: | 8 GB (8x1 GB 800 MHz FB-DIMM CL5) | Peak Pointers: | 32/64-bit |
| Disk Subsystem: | 1 x 73 GB SAS 15K 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 | 367 | 37.1 | 367 | 37.0 | <u>367</u> | <u>37.0</u> | 353 | 38.5 | 352 | 38.6 | <u>353</u> | <u>38.5</u> |
| 416.gamess | <u>829</u> | <u>23.6</u> | 829 | 23.6 | 829 | 23.6 | <u>829</u> | <u>23.6</u> | 829 | 23.6 | 829 | 23.6 |
| 433.milc | <u>882</u> | <u>10.4</u> | 882 | 10.4 | 883 | 10.4 | <u>882</u> | <u>10.4</u> | 882 | 10.4 | 884 | 10.4 |
| 434.zeusmp | 488 | 18.7 | 487 | 18.7 | <u>487</u> | <u>18.7</u> | <u>503</u> | <u>18.1</u> | 503 | 18.1 | 503 | 18.1 |
| 435.gromacs | 325 | 22.0 | 325 | 22.0 | <u>325</u> | <u>22.0</u> | 325 | 22.0 | 325 | 22.0 | <u>325</u> | <u>22.0</u> |
| 436.cactusADM | <u>377</u> | <u>31.7</u> | 377 | 31.7 | 378 | 31.6 | <u>377</u> | <u>31.7</u> | 377 | 31.7 | 378 | 31.6 |
| 437.leslie3d | <u>489</u> | <u>19.2</u> | 489 | 19.2 | 488 | 19.2 | <u>489</u> | <u>19.2</u> | 489 | 19.2 | 488 | 19.2 |
| 444.namd | 450 | 17.8 | 450 | 17.8 | <u>450</u> | <u>17.8</u> | 444 | 18.1 | 444 | 18.1 | <u>444</u> | <u>18.1</u> |
| 447.dealII | <u>641</u> | <u>17.8</u> | 641 | 17.8 | 642 | 17.8 | <u>641</u> | <u>17.8</u> | 641 | 17.8 | 642 | 17.8 |
| 450.soplex | <u>580</u> | <u>14.4</u> | 578 | 14.4 | 580 | 14.4 | <u>570</u> | <u>14.6</u> | <u>572</u> | <u>14.6</u> | <u>571</u> | <u>14.6</u> |
| 453.povray | <u>205</u> | <u>25.9</u> | 205 | 25.9 | 205 | 25.9 | 163 | 32.7 | 163 | 32.7 | <u>163</u> | <u>32.7</u> |
| 454.calculix | 496 | 16.6 | 496 | 16.6 | <u>496</u> | <u>16.6</u> | 328 | 25.1 | 329 | 25.1 | <u>329</u> | <u>25.1</u> |
| 459.GemsFDTD | <u>476</u> | <u>22.3</u> | 476 | 22.3 | 476 | 22.3 | <u>476</u> | <u>22.3</u> | 476 | 22.3 | 476 | 22.3 |
| 465.tonto | 450 | 21.9 | 450 | 21.9 | <u>450</u> | <u>21.9</u> | <u>428</u> | <u>23.0</u> | 429 | 22.9 | 428 | 23.0 |
| 470.lbm | <u>1715</u> | <u>8.01</u> | 1713 | 8.02 | 1715 | 8.01 | 586 | 23.4 | 588 | 23.4 | <u>586</u> | <u>23.4</u> |
| 481.wrf | 472 | 23.7 | 472 | 23.7 | <u>472</u> | <u>23.7</u> | <u>472</u> | <u>23.7</u> | 472 | 23.7 | <u>472</u> | <u>23.7</u> |
| 482.sphinx3 | 646 | 30.2 | <u>644</u> | <u>30.2</u> | 644 | 30.3 | <u>631</u> | <u>30.9</u> | 628 | 31.0 | 633 | 30.8 |

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 -Qstd=c99

C++ benchmarks:

 icl

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Base Compiler Invocation (Continued)

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: -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 -Qparallel /F10000000000 shlw64mt.lib
libguide40.lib           -link /FORCE:MULTIPLE
```

C++ benchmarks:

```
-fast -Qauto-ilp32 -Qparallel -Qcxx_features /F10000000000
shlw64mt.lib libguide40.lib           -link /FORCE:MULTIPLE
```

Fortran benchmarks:

```
-fast -Qauto-ilp32 -Qparallel /F10000000000 libguide40.lib
           -link /FORCE:MULTIPLE
```

Benchmarks using both Fortran and C:

```
-fast -Qauto-ilp32 -Qparallel /F10000000000 libguide40.lib
           -link /FORCE:MULTIPLE
```



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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: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qunroll12 -Oa /F10000000000 shlw64mt.lib libguide40.lib
-link /FORCE:MULTIPLE

470.lbm: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qunroll12 -Qscalar-rep- -Qprefetch /F10000000000
shlw64mt.lib libguide40.lib -link /FORCE:MULTIPLE

482.sphinx3: -fast -Qauto-ilp32 -Qunroll12 /F10000000000 shlw64mt.lib
libguide40.lib -link /FORCE:MULTIPLE

C++ benchmarks:

444.namd: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Oa -Qcxx_features /F10000000000 shlw64mt.lib
libguide40.lib -link /FORCE:MULTIPLE

447.dealII: basepeak = yes

450.soplex: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qparallel -Qcxx_features /F10000000000 shlw64mt.lib
libguide40.lib -link /FORCE:MULTIPLE

453.povray: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qunroll14 -Qansi-alias -Qcxx_features /F10000000000
shlw64mt.lib libguide40.lib -link /FORCE:MULTIPLE

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Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: -fast -Qauto-ilp32 -Qparallel -Qprefetch /F1000000000
libguide40.lib -link /FORCE:MULTIPLE

416.gamess: basepeak = yes

434.zeusmp: -Qprof_gen(pass 1) -Qprof_use(pass 2) -QxT -O2 -Qprec-div-
-Qunroll0 -Qscalar-rep- /F1000000000 libguide40.lib
-link /FORCE:MULTIPLE

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qauto-ilp32
-Qunroll4 -Qauto /F1000000000 libguide40.lib
-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 libguide40.lib
-link /FORCE:MULTIPLE

436.cactusADM: basepeak = yes

454.calculix: -fast -Qauto-ilp32 -Qunroll-aggressive /F1000000000
libguide40.lib -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.20090714.01.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.20090714.01.xml>

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For other inquiries, please contact webmaster@spec.org.

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