# SPEC® CFP2006 Result

## Dell Inc.

PowerEdge 2900 III (Intel Xeon E5410, 2.33 GHz)

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>SPECfp_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.2</td>
<td>20.4</td>
</tr>
</tbody>
</table>

### CPU2006 License: 55

**Test sponsor:** Dell Inc.  
**Test date:** Nov-2008

**Hardware Availability:** Sep-2008  
**Software Availability:** Nov-2008

### Software

**Operating System:** SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp  
**Compiler:** Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042, l_fproc_b_11.0.042

**Auto Parallel:** Yes  
**File System:** ReiserFS  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 64-bit

### Hardware

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>17.8</td>
</tr>
<tr>
<td>416.gamess</td>
<td>16.3</td>
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<tr>
<td>433.milc</td>
<td>15.2</td>
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<tr>
<td>434.zeusmp</td>
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<tr>
<td>435.gromacs</td>
<td>15.5</td>
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<tr>
<td>436.cactusADM</td>
<td>25.1</td>
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<tr>
<td>437.leslie3d</td>
<td>17.2</td>
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<tr>
<td>444.namd</td>
<td>12.6</td>
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<tr>
<td>447.dealII</td>
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<td>450.soplex</td>
<td>13.5</td>
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<td>453.povray</td>
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<td>454.calculix</td>
<td>19.1</td>
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<td>459.GemsFDTD</td>
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<tr>
<td>465.tonto</td>
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<tr>
<td>470.lbm</td>
<td>15.0</td>
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<tr>
<td>481.wrf</td>
<td>18.3</td>
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<tr>
<td>482.sphinx3</td>
<td>22.6</td>
</tr>
</tbody>
</table>

**SPECfp_base2006 = 20.4**

**SPECfp2006 = 21.2**

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Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
Dell Inc.
PowerEdge 2900 III (Intel Xeon E5410, 2.33 GHz)

SPECfp2006 = 21.2
SPECfp_base2006 = 20.4

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

L3 Cache: None
Other Cache: None
Memory: 16 GB (8 x 2 GB DDR2-667 FBDIMM)
Disk Subsystem: 2 x 73 GB 15000 RPM SAS
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds Base</th>
<th>Ratio Base</th>
<th>Seconds Base</th>
<th>Ratio Base</th>
<th>Seconds Peak</th>
<th>Ratio Peak</th>
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<tbody>
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</tbody>
</table>

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

Operating System Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

General Notes

OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 200M

Base Compiler Invocation

C benchmarks:
  icc

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SPEC CFP2006 Result

Dell Inc.

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**SPECfp2006 =** 21.2

**SPECfp_base2006 =** 20.4

CPU2006 license: 55

Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Nov-2008

Hardware Availability: Sep-2008

Software Availability: Nov-2008

### Base Compiler Invocation (Continued)

- C++ benchmarks:
  - icpc

- Fortran benchmarks:
  - ifort

- Benchmarks using both Fortran and C:
  - icc ifort

### Base Portability Flags

- 410.bwaves: -DSPEC_CPU_LP64
- 416.gameb: -DSPEC_CPU_LP64
- 433.milc: -DSPEC_CPU_LP64
- 434.zeusmp: -DSPEC_CPU_LP64
- 435.gromacs: -DSPEC_CPU_LP64 -nofor_main
- 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
- 437.leslie3d: -DSPEC_CPU_LP64
- 444.namd: -DSPEC_CPU_LP64
- 447.dealII: -DSPEC_CPU_LP64
- 450.soplex: -DSPEC_CPU_LP64
- 453.povray: -DSPEC_CPU_LP64 -nofor_main
- 454.calculix: -DSPEC_CPU_LP64 -nofor_main
- 459.GemsFDTD: -DSPEC_CPU_LP64
- 465.tonto: -DSPEC_CPU_LP64
- 470.lbm: -DSPEC_CPU_LP64
- 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
- 482.sphinx3: -DSPEC_CPU_LP64

### Base Optimization Flags

- C benchmarks:
  - -xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

- C++ benchmarks:
  - -xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

- Fortran benchmarks:
  - -xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

- Benchmarks using both Fortran and C:
  - -xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
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Peak Compiler Invocation

C benchmarks (except as noted below):
  icc

  482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc
               -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
               -I/opt/intel/Compiler/11.0/042/ipp/ia32/include

C++ benchmarks (except as noted below):
  icpc

  450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc
             -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
             -I/opt/intel/Compiler/11.0/042/ipp/ia32/include

Fortran benchmarks:
  ifort

Benchmarks using both Fortran and C:
  icc ifort

Peak Portability Flags

  410.bwaves: -DSPEC_CPU_LP64
  416.gamess: -DSPEC_CPU_LP64
  433.milc: -DSPEC_CPU_LP64
  434.zeusmp: -DSPEC_CPU_LP64
  435.gromacs: -DSPEC_CPU_LP64 -nofor_main
  436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
  437.leslie3d: -DSPEC_CPU_LP64
  444.namd: -DSPEC_CPU_LP64
  447.dealII: -DSPEC_CPU_LP64
  453.povray: -DSPEC_CPU_LP64
  454.calculix: -DSPEC_CPU_LP64 -nofor_main
  459.GemsFDTD: -DSPEC_CPU_LP64
  465.tonto: -DSPEC_CPU_LP64
  470.lbm: -DSPEC_CPU_LP64
  481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

  433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
            -no-prec-div -static -fno-alias

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Peak Optimization Flags (Continued)

470.lbm: basepeak = yes

482.sphinx3: -xsse4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xsse4.1 -ipo -O3
          -no-prec-div -static -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xsse4.1 -ipo -O3
          -no-prec-div -static -unroll2 -ansi-alias -scalar-rep-
          -opt-prefetch

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xsse4.1 -ipo -O3
          -no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xsse4.1 -ipo -O3
          -no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xsse4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
            -parallel

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xsse4.1 -ipo -O3
            -no-prec-div -static -unroll2 -Ob0 -ansi-alias
            -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xsse4.1 -ipo -O3
             -no-prec-div -static -unroll2 -Ob0 -opt-prefetch
             -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xsse4.1 -ipo -O3
          -no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xsse4.1 -ipo -O3
             -no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xsse4.1 -ipo -O3
                -no-prec-div -static -unroll2 -opt-prefetch -parallel
                -auto-ilp32

454.calculix: -xsse4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

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CPU2006 license: 55
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Test date: Nov-2008
Hardware Availability: Sep-2008
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Peak Optimization Flags (Continued)
481.wrf: -xSSE4.1 -ipo -03 -no-prec-div -static -opt-prefetch
-parallel -auto-ilp32

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.00.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.xml

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

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