Dell Inc.

PowerEdge T410 (Intel Xeon E5530, 2.4 GHz)

SPECfp®2006 = 32.4
SPECfp_base2006 = 30.5

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

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<th>Test</th>
<th>SPECfp2006</th>
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<tbody>
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<td>416.gamess</td>
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<td>482.sphinx3</td>
<td>31.9</td>
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</tr>
</tbody>
</table>

SPECfp2006 = 30.5

Hardware

CPU Name: Intel Xeon E5530
CPU Characteristics: Intel Turbo Boost Technology up to 2.66 GHz
CPU MHz: 2400
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

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 Professional 11.0 Build 20090131 Package ID: 1_cproc_p_11.0.080, 1_cprof_p_11.0.080
Auto Parallel: Yes
File System: ReiserFS
System State: Run level 3 (multi-user)
Base Pointers: 64-bit

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4 GB DDR3-1066 DR RDIMM)
Disk Subsystem: 1 x 160 GB 7200 RPM SATA
Other Hardware: None
Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.2008020

Results Table

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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 stacksize to unlimited prior to run

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M

Base Compiler Invocation

C benchmarks: icc

Continued on next page
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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.games: -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
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:
   -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
   -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
   -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
   -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
Dell Inc. PowerEdge T410 (Intel Xeon E5530, 2.4 GHz)

**SPEC CFP2006 Result**

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---

### Peak Compiler Invocation

C benchmarks (except as noted below):

```
icc
482.sphinx3: icc -m32
```

C++ benchmarks (except as noted below):

```
icpc
450.soplex: icpc -m32
```

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

```
470.lbm: basepeak = yes
```

```
482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
```

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
          -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
          -fno-alias -auto-ilp32

447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
           -unroll2 -ansi-alias -scalar-rep -opt-prefetch

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
           -opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
           -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
            -parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
           -unroll2 -Ob0 -ansi-alias -scalar-rep-

343.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
            -unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
           -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
               -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
               -unroll2 -opt-prefetch -parallel -auto-ilp32

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Peak Optimization Flags (Continued)

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
(parallel -auto-ilp32

The flags file that was used to format this result can be browsed at

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.xml

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

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