SPEC® CFP2006 Result

Dell Inc.

$SPECfp^{®}_rate2006 = $ **186**

PowerEdge R610 (Intel Xeon X5550, 2.67 GHz)

$SPECfp_rate_base2006 = $ **179**

CPU2006 license: 55
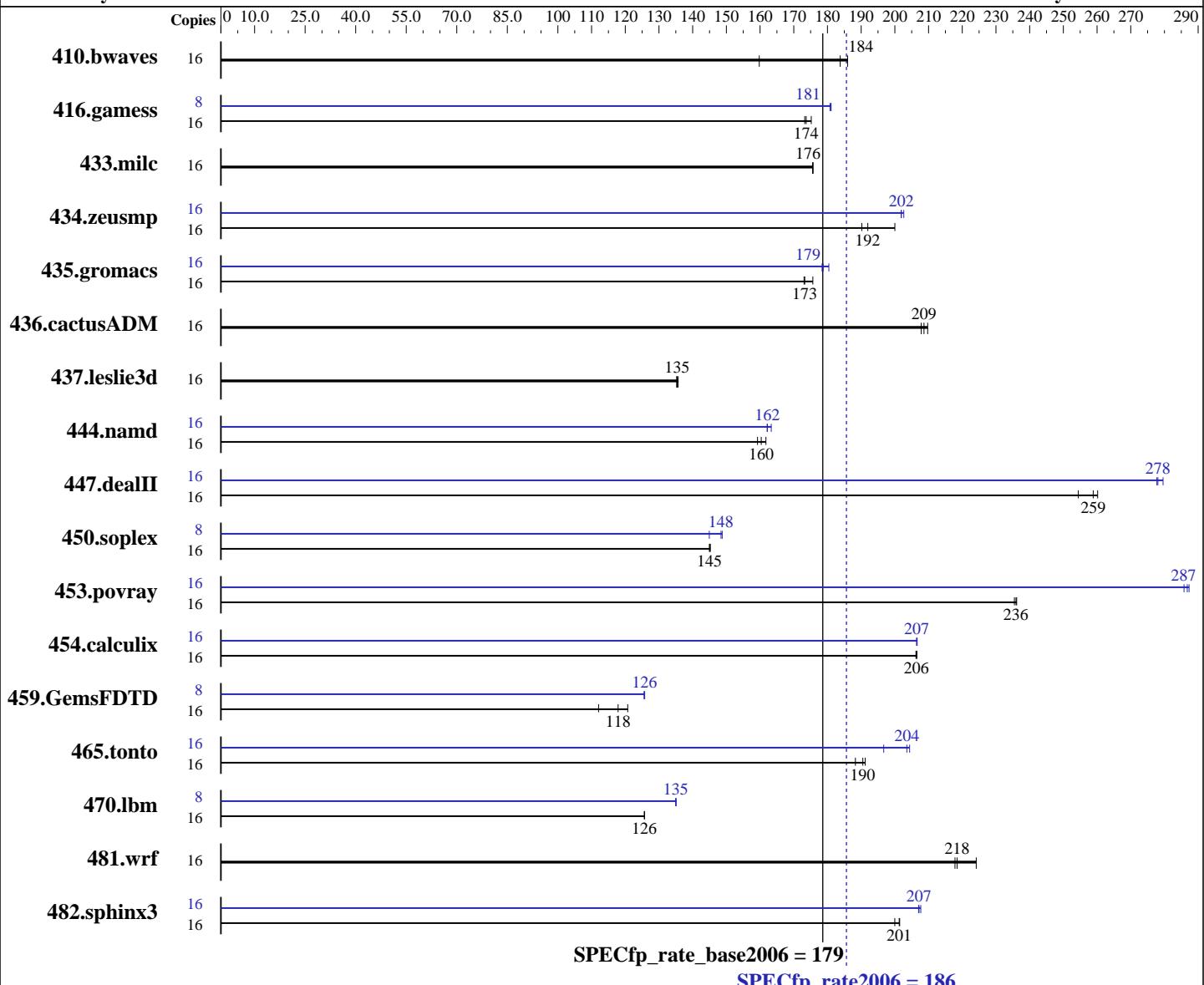
Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Mar-2009

Hardware Availability: Mar-2009

Software Availability: Mar-2009

Benchmark	Copies	Result
410.bwaves	16	184
416.gamess	8	181
416.gamess	16	174
433.milc	16	176
434.zeusmp	16	202
434.zeusmp	16	192
435.gromacs	16	179
435.gromacs	16	173
436.cactusADM	16	209
437.leslie3d	16	135
444.namd	16	162
444.namd	16	160
447.dealII	16	278
447.dealII	16	259
450.soplex	8	148
450.soplex	16	145
453.povray	16	287
453.povray	16	236
454.calculix	16	207
454.calculix	16	206
459.GemsFDTD	8	126
459.GemsFDTD	16	118
465.tonto	16	204
465.tonto	16	190
470.lbm	8	135
470.lbm	16	126
481.wrf	16	218
482.sphinx3	16	207
482.sphinx3	16	201

SPECfp_rate_base2006 = 179

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Hardware

CPU Name: Intel Xeon X5550

CPU Characteristics: Intel Turbo Boost Technology up to 3.06 GHz

CPU MHz: 2667

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: 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 for Linux
Build 20090131 Package ID: l_cproc_p_11.0.080, l_cprof_p_11.0.080

Auto Parallel: No

File System: ReiserFS

System State: Run level 3 (multi-user)

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L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	24 GB (6 x 4 GB DDR3-1333 DR RDIMM)
Disk Subsystem:	1 x 146 GB 10000 RPM SAS
Other Hardware:	None

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

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1361	160	**1183**	**184**	1169	186	16	1361	160	**1183**	**184**	1169	186
416.gamess	16	**1804**	**174**	1808	173	1788	175	8	867	181	865	181	**866**	**181**
433.milc	16	836	176	**836**	**176**	836	176	16	836	176	**836**	**176**	836	176
434.zeusmp	16	**758**	**192**	765	190	728	200	16	718	203	**721**	**202**	721	202
435.gromacs	16	650	176	**659**	**173**	660	173	16	633	180	**639**	**179**	640	178
436.cactusADM	16	**916**	**209**	912	210	920	208	16	**916**	**209**	912	210	920	208
437.leslie3d	16	1112	135	**1111**	**135**	1108	136	16	1112	135	**1111**	**135**	1108	136
444.namd	16	793	162	806	159	**800**	**160**	16	786	163	792	162	**791**	**162**
447.dealII	16	719	254	704	260	**707**	**259**	16	659	278	**658**	**278**	655	280
450.soplex	16	919	145	**920**	**145**	920	145	8	460	145	**450**	**148**	448	149
453.povray	16	360	236	**361**	**236**	361	235	16	296	287	**297**	**287**	298	286
454.calculix	16	**639**	**206**	640	206	639	207	16	639	206	**639**	**207**	639	207
459.GemsFDTD	16	1515	112	**1440**	**118**	1406	121	8	675	126	**675**	**126**	676	126
465.tonto	16	836	188	823	191	**826**	**190**	16	800	197	770	204	**773**	**204**
470.lbm	16	1748	126	**1749**	**126**	1749	126	8	814	135	**814**	**135**	814	135
481.wrf	16	820	218	**818**	**218**	797	224	16	820	218	**818**	**218**	797	224
482.sphinx3	16	1548	201	1559	200	**1549**	**201**	16	**1505**	**207**	1506	207	1501	208

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.
     numactl was used to bind copies to the cores
```

Base Compiler Invocation

C benchmarks:
```
    icc
```

C++ benchmarks:
```
    icpc
```

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Base Compiler Invocation (Continued)

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icc ifort
```

Base 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
   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
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc
```

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PowerEdge R610 (Intel Xeon X5550, 2.67 GHz)

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

Peak Compiler Invocation (Continued)

        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: `basepeak = yes`

        470.lbm: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`
              `-auto-ilp32`

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

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`

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Peak Optimization Flags (Continued)

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-

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: basepeak = yes

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-

434.zeusmp: -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)

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

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)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

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The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.04.html`

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.20090710.04.xml`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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