SPEC® CFP2006 Result

Intel Corporation

Supermicro SuperServer 6026T-NTR+ (Intel Xeon X5550, 2.66 GHz)

$SPECfp®_rate2006 = $ 189

$SPECfp_rate_base2006 = $ 183

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Mar-2009
Hardware Availability: Mar-2009
Software Availability: Feb-2009

Benchmark	Copies	Result
410.bwaves	8	189
410.bwaves	16	183
416.gamess	8	190
416.gamess	16	184
433.milc	16	179
434.zeusmp	16	200
434.zeusmp	16	197
435.gromacs	16	186
435.gromacs	16	180
436.cactusADM	16	217
437.leslie3d	16	135
444.namd	16	171
444.namd	16	168
447.dealII	16	290
447.dealII	16	268
450.soplex	16	143
453.povray	16	295
453.povray	16	244
454.calculix	16	214
454.calculix	16	214
459.GemsFDTD	8	125
459.GemsFDTD	16	121
465.tonto	16	209
465.tonto	16	196
470.lbm	8	134
470.lbm	16	125
481.wrf	16	224
482.sphinx3	16	211
482.sphinx3	16	202

SPECfp_rate_base2006 = 183

SPECfp_rate2006 = 189

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 SLES10 SP2, Kernel 2.6.16.60-0.34-smp for x86_64
Compiler: Intel C++ and Fortran Compiler 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)
Base Pointers: 64-bit

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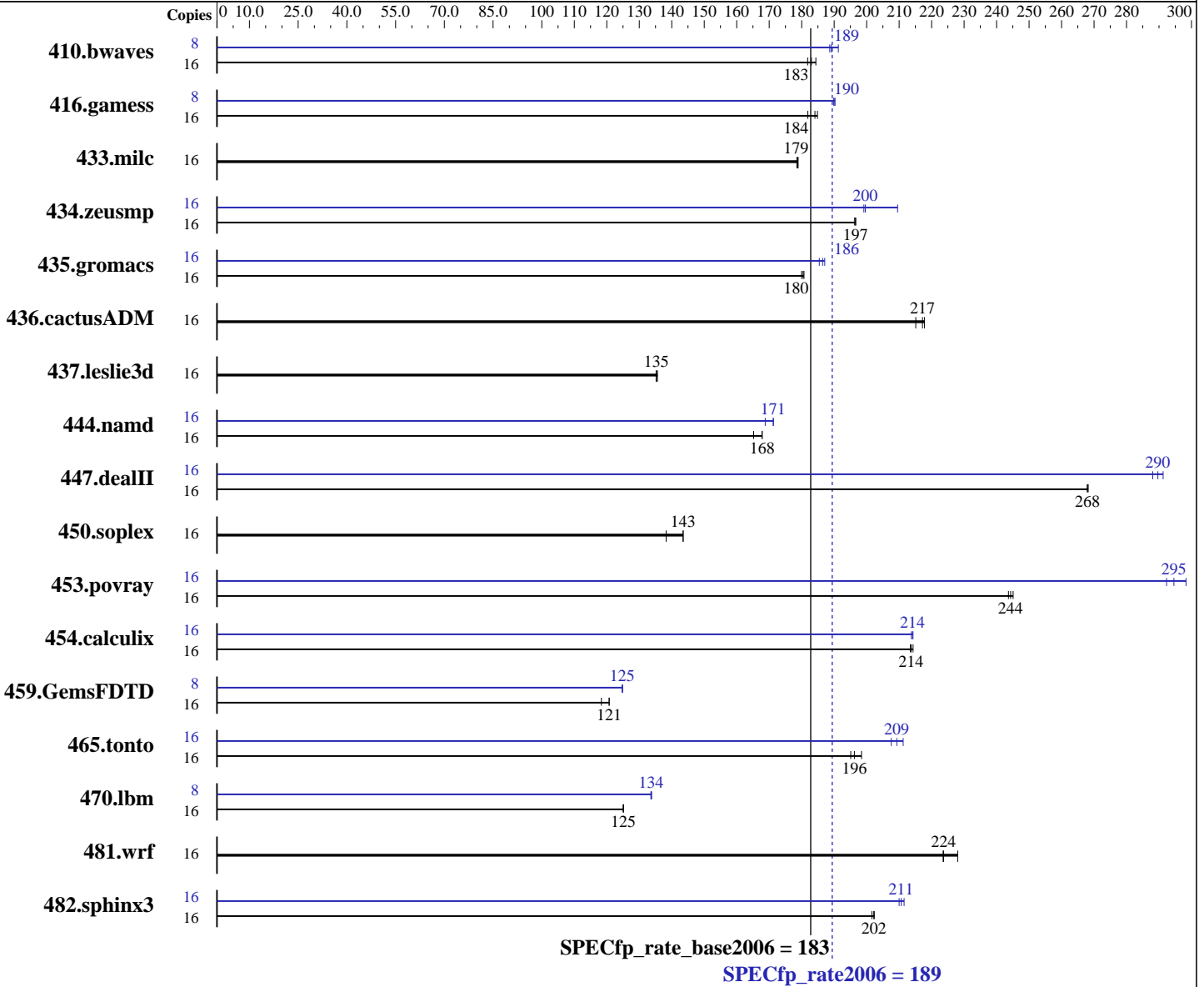SPECfp_rate2006 = 189

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L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	24 GB (6 x 4GB DDR3-1333, CL9)
Disk Subsystem:	1 x 150 GB SATA, 10000RPM
Other Hardware:	None

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

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1196	182	**1188**	**183**	1179	184	8	576	189	**575**	**189**	568	191
416.gamess	16	1695	185	**1702**	**184**	1722	182	8	**824**	**190**	825	190	823	190
433.milc	16	823	179	821	179	**821**	**179**	16	823	179	821	179	**821**	**179**
434.zeusmp	16	**741**	**197**	740	197	742	196	16	695	210	731	199	**729**	**200**
435.gromacs	16	632	181	**633**	**180**	635	180	16	611	187	**613**	**186**	616	185
436.cactusADM	16	889	215	878	218	**880**	**217**	16	889	215	878	218	**880**	**217**
437.leslie3d	16	**1112**	**135**	1113	135	1109	136	16	**1112**	**135**	1113	135	1109	136
444.namd	16	**765**	**168**	765	168	777	165	16	749	171	**749**	**171**	760	169
447.dealII	16	683	268	**683**	**268**	682	268	16	628	291	**632**	**290**	635	288
450.soplex	16	965	138	930	144	**930**	**143**	16	965	138	930	144	**930**	**143**
453.povray	16	349	244	**348**	**244**	347	245	16	291	292	**289**	**295**	285	298
454.calculix	16	616	214	**618**	**214**	618	213	16	**616**	**214**	616	214	617	214
459.GemsFDTD	16	1435	118	1406	121	**1406**	**121**	8	680	125	**680**	**125**	681	125
465.tonto	16	**802**	**196**	807	195	793	198	16	745	211	**752**	**209**	758	208
470.lbm	16	**1757**	**125**	1758	125	1756	125	8	**822**	**134**	821	134	823	134
481.wrf	16	784	228	**799**	**224**	799	224	16	784	228	**799**	**224**	799	224
482.sphinx3	16	1547	202	**1542**	**202**	1541	202	16	1485	210	**1480**	**211**	1474	212

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
```

Continued on next page

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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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Peak Compiler Invocation (Continued)

482.sphinx3: `icc -m32`

C++ benchmarks:
`icpc`

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`
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`

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: basepeak = yes

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

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
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-icc11.0-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-icc11.0-fp-linux64-revA.20090710.04.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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