SPEC® CFP2006 Result

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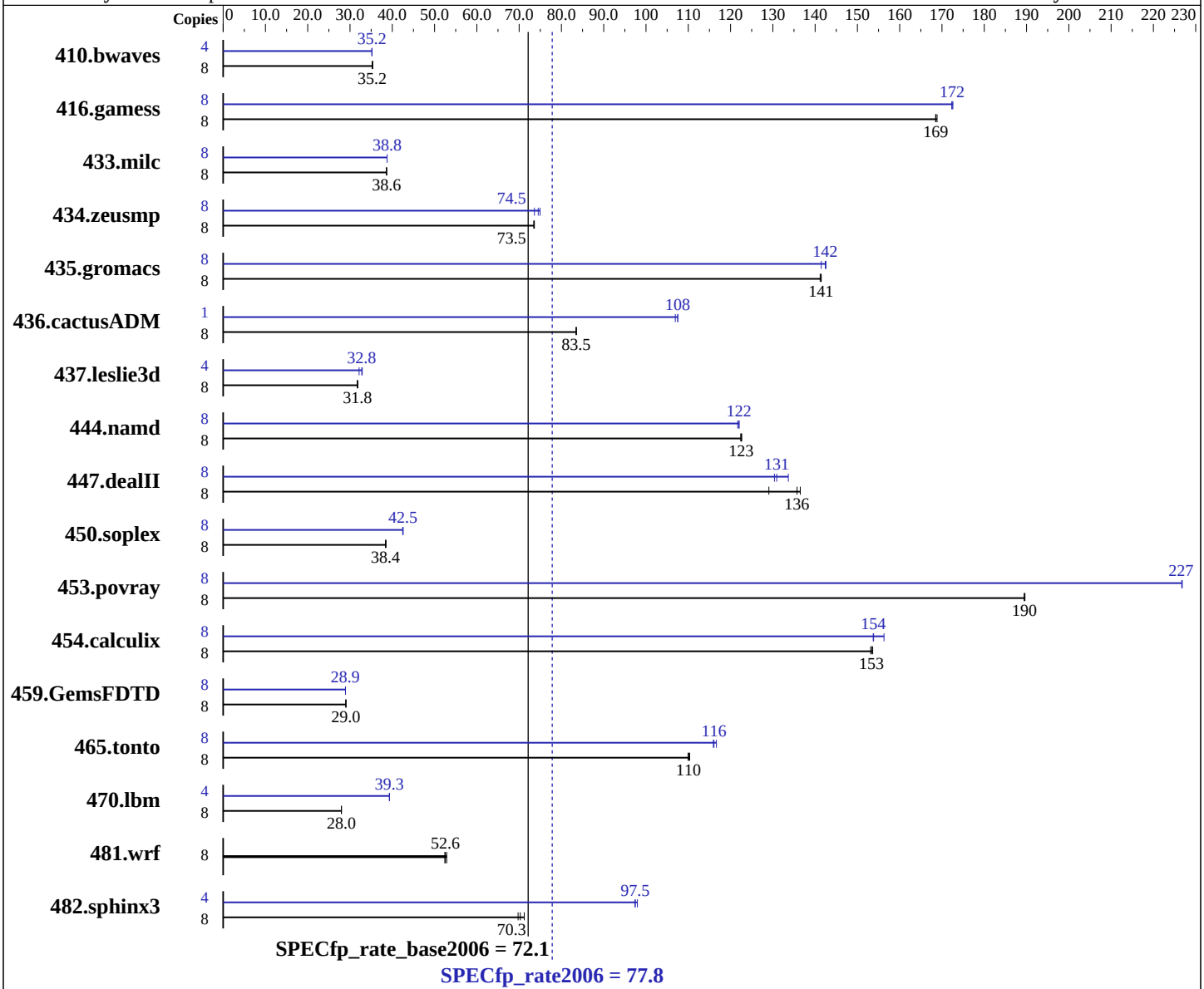
Supermicro Motherboard B7DBE

SPECfp®_rate2006 = 77.8

SPECfp_rate_base2006 = 72.1

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Feb-2009
Hardware Availability: Nov-2008
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Xeon E5440
CPU Characteristics:	Quad Core, 2.83 GHz, 1333 MHz System Bus
CPU MHz:	2833
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

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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 20080930 Package ID: l_cproc_p_11.0.066, l_cprof_p_11.0.066
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8 x 2GB DDR2-667 ECC Reg CL5, FBDIMM)
Disk Subsystem: 80 GB SATA, 7200RPM
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	8	3072	35.4	**3085**	**35.2**	3086	35.2	4	**1545**	**35.2**	1545	35.2	1544	35.2
416.gamess	8	928	169	**929**	**169**	930	168	8	908	173	909	172	**909**	**172**
433.milc	8	1900	38.6	**1900**	**38.6**	1901	38.6	8	1894	38.8	**1894**	**38.8**	1895	38.8
434.zeusmp	8	991	73.5	**991**	**73.5**	989	73.6	8	**977**	**74.5**	989	73.6	971	74.9
435.gromacs	8	404	141	405	141	**404**	**141**	8	404	141	**401**	**142**	401	143
436.cactusADM	8	1146	83.4	**1145**	**83.5**	1144	83.5	1	112	107	**111**	**108**	111	108
437.leslie3d	8	2361	31.8	**2368**	**31.8**	2371	31.7	4	**1147**	**32.8**	1143	32.9	1170	32.1
444.namd	8	**524**	**123**	524	122	523	123	8	**526**	**122**	526	122	527	122
447.dealII	8	**674**	**136**	709	129	671	136	8	685	134	702	130	**699**	**131**
450.soplex	8	**1736**	**38.4**	1737	38.4	1732	38.5	8	**1570**	**42.5**	1571	42.5	1567	42.6
453.povray	8	225	189	224	190	**225**	**190**	8	188	227	**188**	**227**	188	227
454.calculix	8	430	154	431	153	**430**	**153**	8	**429**	**154**	429	154	422	156
459.GemsFDTD	8	**2924**	**29.0**	2922	29.1	2926	29.0	8	2933	28.9	**2934**	**28.9**	2934	28.9
465.tonto	8	716	110	**715**	**110**	713	110	8	679	116	**678**	**116**	675	117
470.lbm	8	3931	28.0	**3931**	**28.0**	3930	28.0	4	1398	39.3	1397	39.3	**1397**	**39.3**
481.wrf	8	1705	52.4	1690	52.9	**1700**	**52.6**	8	1705	52.4	1690	52.9	**1700**	**52.6**
482.sphinx3	8	**2219**	**70.3**	2190	71.2	2235	69.8	4	796	98.0	**800**	**97.5**	800	97.4

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.
 taskset was used to bind processes to cores except
 for 436.cactusADM peak
```

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 processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
```

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General Notes (Continued)

```
Hardware Prefetcher = disabled (Default = enabled)
Tested system can be used with CSE-161M-320B.
To ensure system stability, SBE-710E-D28 - Enclosure chassis with two 1400W power supplies are required.
Products description can be obtained at
http://www.supermicro.com/servers/blade/module/SBI-7125B-T1.cfm
http://www.supermicro.com/servers/blade/enclosure/
```

Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

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:
`-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch`

Continued on next page

Base Optimization Flags (Continued)

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

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

Benchmarks using both Fortran and C:
`-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch`

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 (except as noted below):
`ifort`

437.leslie3d: `ifort -m32`

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`
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

470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-ilp32

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-

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

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

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-malloc-options=3 -opt-prefetch

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

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

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Peak Optimization Flags (Continued)

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`

481.wrf: `basepeak = yes`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.html`
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revF.html`

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

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

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