SPEC® CFP2006 Result

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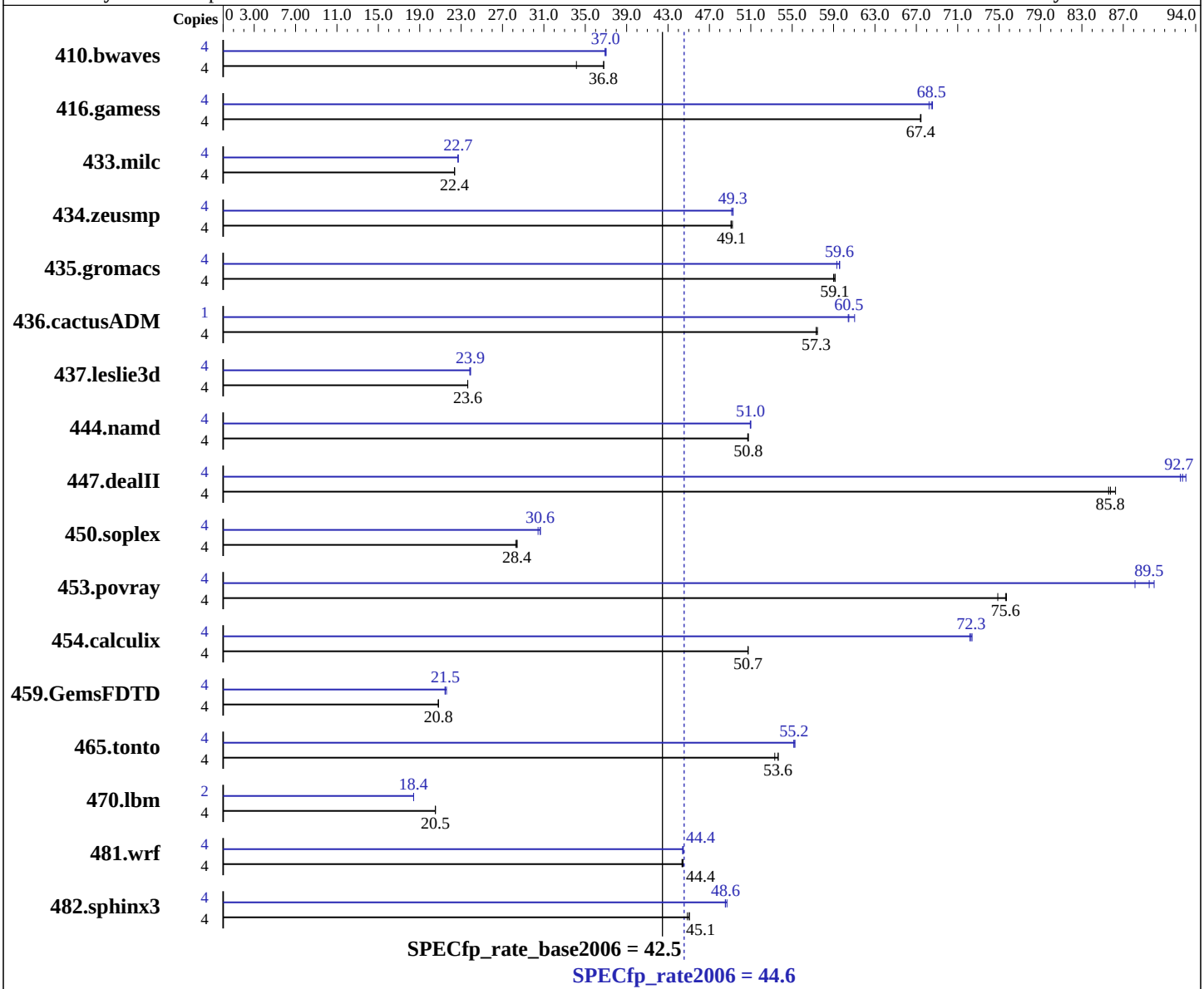
Supermicro Motherboard C2SBX

SPECfp®_rate2006 = 44.6

SPECfp_rate_base2006 = 42.5

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

Test date: Feb-2008
Hardware Availability: Sep-2007
Software Availability: Feb-2008



Hardware

CPU Name:	Intel Xeon X3220
CPU Characteristics:	2.40 GHz 1066 MHz System Bus
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	8 MB I+D on chip per chip, 4 MB shared / 2 cores

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Software

Operating System:	64-Bit Suse Linux Enterprise Server 10 w/SP1
Compiler:	Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Multi-usr, level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 4 GB (4 x 1 GB PC3-8500U-7-00-BP, DDR3-1066)
Disk Subsystem: Western Digital WD800JD 80 GB SATA 7200RPM
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1592	34.1	1477	36.8	**1479**	**36.8**	4	1473	36.9	1468	37.0	**1471**	**37.0**
416.gamess	4	1162	67.4	**1162**	**67.4**	1161	67.5	4	1142	68.6	1148	68.2	**1144**	**68.5**
433.milc	4	**1642**	**22.4**	1642	22.4	1642	22.4	4	1617	22.7	**1617**	**22.7**	1617	22.7
434.zeusmp	4	**741**	**49.1**	742	49.1	739	49.2	4	**739**	**49.3**	738	49.3	741	49.2
435.gromacs	4	**483**	**59.1**	483	59.2	484	59.0	4	479	59.6	482	59.3	**479**	**59.6**
436.cactusADM	4	**834**	**57.3**	832	57.4	834	57.3	1	196	61.0	198	60.4	**198**	**60.5**
437.leslie3d	4	1591	23.6	**1590**	**23.6**	1590	23.6	4	**1573**	**23.9**	1577	23.8	1573	23.9
444.namd	4	**632**	**50.8**	633	50.7	632	50.8	4	629	51.0	**629**	**51.0**	630	50.9
447.dealII	4	531	86.3	535	85.6	**534**	**85.8**	4	492	93.1	495	92.5	**493**	**92.7**
450.soplex	4	**1175**	**28.4**	1179	28.3	1174	28.4	4	**1089**	**30.6**	1088	30.7	1096	30.4
453.povray	4	281	75.7	**281**	**75.6**	284	74.9	4	236	90.0	**238**	**89.5**	241	88.1
454.calculix	4	**650**	**50.7**	651	50.7	650	50.7	4	456	72.4	**457**	**72.3**	457	72.2
459.GemsFDTD	4	**2040**	**20.8**	2040	20.8	2040	20.8	4	**1977**	**21.5**	1966	21.6	1979	21.4
465.tonto	4	738	53.3	**734**	**53.6**	734	53.7	4	**713**	**55.2**	712	55.3	714	55.2
470.lbm	4	**2679**	**20.5**	2679	20.5	2679	20.5	2	1493	18.4	**1492**	**18.4**	1492	18.4
481.wrf	4	1007	44.3	1005	44.5	**1007**	**44.4**	4	1006	44.4	**1006**	**44.4**	1005	44.5
482.sphinx3	4	1730	45.1	**1730**	**45.1**	1737	44.9	4	1606	48.5	1601	48.7	**1606**	**48.6**

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

General Notes

```
OMP_NUM_THREADS set to the number of cores in the systems
BIOS default settings have been used
All benchmarks complied in 64-bit mode except 437.leslie3d,
450.soplex, 470.lbm, and 482.sphinx3 which were complied
in 32-bit mode at peak
"Taskset" command was used to bind benchmark copies to cores
except for 426.cactusADM at peak
```

Base Compiler Invocation

C benchmarks:

```
icc
```

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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.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:
-fast

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: `icc`

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

450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

Fortran benchmarks (except as noted below):
```
ifort
```

437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

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`
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) `-fast -fno-alias -auto-ilp32`

Continued on next page

Peak Optimization Flags (Continued)

470.lbm: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3`

482.sphinx3: `-fast -unroll2`

C++ benchmarks:

444.namd: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -fno-alias -auto-ilp32`

447.dealII: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias -scalar-rep-`

450.soplex: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -opt-malloc-options=3`

453.povray: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4 -ansi-alias`

Fortran benchmarks:

410.bwaves: `-fast -prefetch`

416.gamess: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -Ob0 -ansi-alias -scalar-rep-`

434.zeusmp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast`

437.leslie3d: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch -opt-malloc-options=3`

459.GemsFDTD: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -Ob0 -prefetch`

465.tonto: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4 -auto`

Benchmarks using both Fortran and C:

435.gromacs: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch -auto-ilp32`

436.cactusADM: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -auto-ilp32`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.05.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090713.05.xml

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