# SPEC® CFP2006 Result



## Supermicro

(Test Sponsor: Intel Corporation)

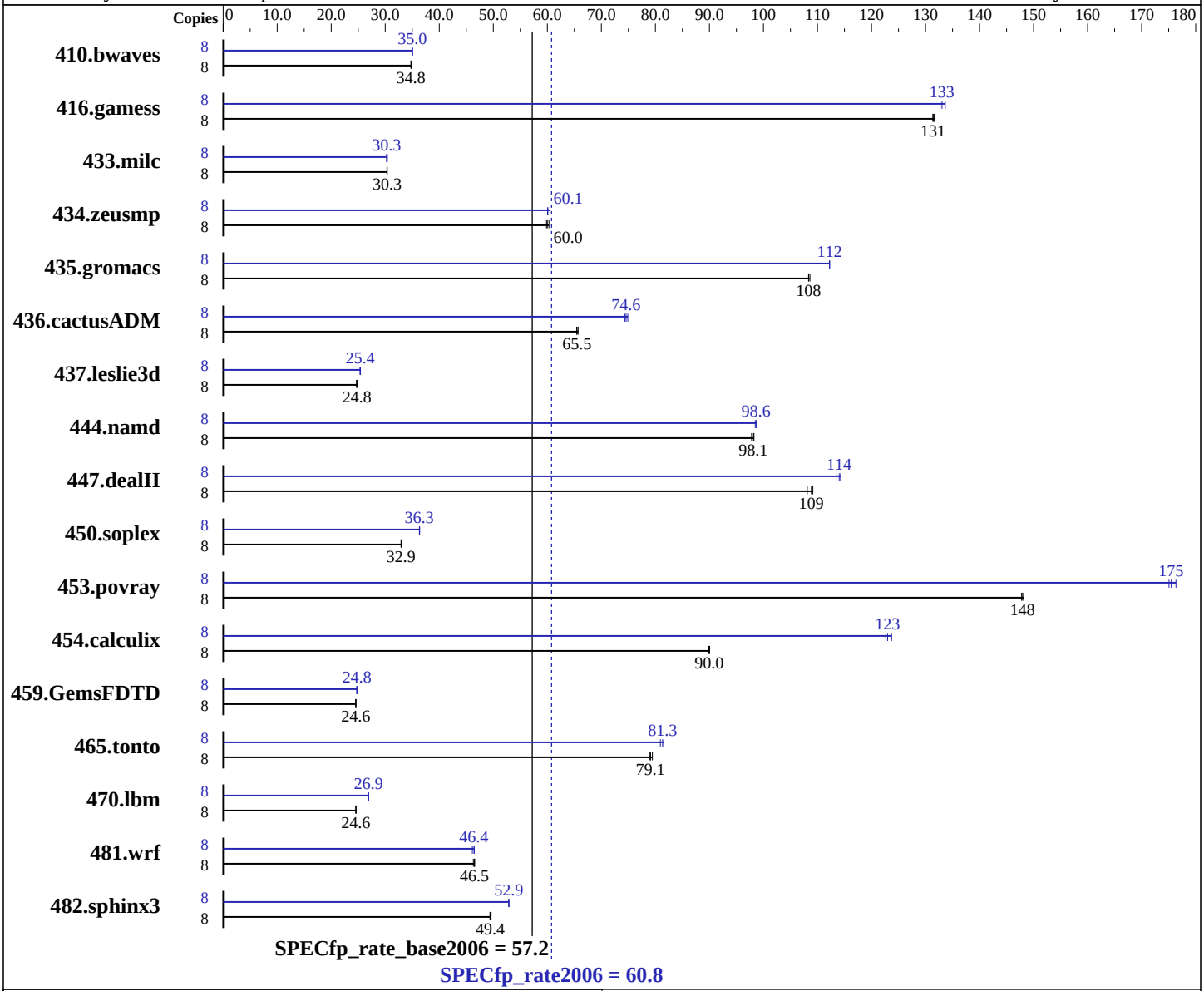
Supermicro X7DB8+ (Intel Xeon processor E5345, 2.33 GHz)

SPECfp®_rate2006 = 60.8

SPECfp_rate_base2006 = 57.2

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

**Test date:** Aug-2007
**Hardware Availability:** Jul-2007
**Software Availability:** Nov-2007




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5345 |
| CPU Characteristics: | Quad Core, 2.33 GHz |
| CPU MHz: | 2333 |
| 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: | 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 SP1, Kernel linux-cbgm 2.6.16.43-0.5-smp for x86_64 |
| Compiler: | Intel C++ and Fortran Compiler for Linux32 and Linux64 Version 10.1 Build 20070725 |
| Auto Parallel: | No |
| File System: | ReiserFS |
| System State: | Multi-user, run level 3 |
| Base Pointers: | 64-bit |

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8 * 2GB Samsung DDR2 5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: Seagate, SCSI, 73GB, 10Krpm, 1 disk only
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 8 | 3124 | 34.8 | **3127** | **34.8** | 3127 | 34.8 | 8 | 3104 | 35.0 | 3104 | 35.0 | **3104** | **35.0** |
| 416.gamess | 8 | 1190 | 132 | **1192** | **131** | 1192 | 131 | 8 | 1172 | 134 | **1177** | **133** | 1181 | 133 |
| 433.milc | 8 | 2423 | 30.3 | 2418 | 30.4 | **2420** | **30.3** | 8 | **2426** | **30.3** | 2428 | 30.3 | 2416 | 30.4 |
| 434.zeusmp | 8 | **1213** | **60.0** | 1216 | 59.8 | 1207 | 60.3 | 8 | 1203 | 60.5 | 1212 | 60.0 | **1211** | **60.1** |
| 435.gromacs | 8 | 526 | 109 | 527 | 108 | **527** | **108** | 8 | **509** | **112** | 509 | 112 | 509 | 112 |
| 436.cactusADM | 8 | 1455 | 65.7 | **1460** | **65.5** | 1461 | 65.4 | 8 | 1276 | 74.9 | **1282** | **74.6** | 1286 | 74.4 |
| 437.leslie3d | 8 | **3036** | **24.8** | 3048 | 24.7 | 3021 | 24.9 | 8 | **2962** | **25.4** | 2970 | 25.3 | 2958 | 25.4 |
| 444.namd | 8 | **654** | **98.1** | 656 | 97.8 | 653 | 98.2 | 8 | **650** | **98.6** | 652 | 98.5 | 650 | 98.7 |
| 447.dealII | 8 | 847 | 108 | **841** | **109** | 839 | 109 | 8 | **803** | **114** | 801 | 114 | 807 | 113 |
| 450.soplex | 8 | 2024 | 33.0 | **2025** | **32.9** | 2027 | 32.9 | 8 | 1837 | 36.3 | 1834 | 36.4 | **1837** | **36.3** |
| 453.povray | 8 | **288** | **148** | 287 | 148 | 288 | 148 | 8 | 243 | 175 | 241 | 176 | **243** | **175** |
| 454.calculix | 8 | 733 | 90.0 | 734 | 89.9 | **734** | **90.0** | 8 | 533 | 124 | **537** | **123** | 538 | 123 |
| 459.GemsFDTD | 8 | 3461 | 24.5 | **3456** | **24.6** | 3452 | 24.6 | 8 | 3430 | 24.7 | 3427 | 24.8 | **3429** | **24.8** |
| 465.tonto | 8 | 991 | 79.4 | 997 | 79.0 | **995** | **79.1** | 8 | **968** | **81.3** | 965 | 81.5 | 973 | 80.9 |
| 470.lbm | 8 | 4473 | 24.6 | 4471 | 24.6 | **4472** | **24.6** | 8 | 4087 | 26.9 | **4086** | **26.9** | 4086 | 26.9 |
| 481.wrf | 8 | 1930 | 46.3 | **1921** | **46.5** | 1920 | 46.6 | 8 | **1925** | **46.4** | 1922 | 46.5 | 1937 | 46.1 |
| 482.sphinx3 | 8 | 3144 | 49.6 | **3154** | **49.4** | 3158 | 49.4 | 8 | 2948 | 52.9 | **2949** | **52.9** | 2950 | 52.9 |

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

## General Notes

```
Bios settings:
Hardware Prefetcher:      Disabled
Adjacent Sector Prefetch: Disabled
All benchmarks compiled in 64-bit mode except 437.leslie3d,
450.soplex, 470.lbm and 482.sphinx3, for peak, are
compiled in 32-bit mode
The taskset command was used to bind processes to cores
```

## 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`

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## 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 -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.20090714.32.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.20090714.32.xml



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

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