# SPEC® CFP2006 Result



## Sun Microsystems

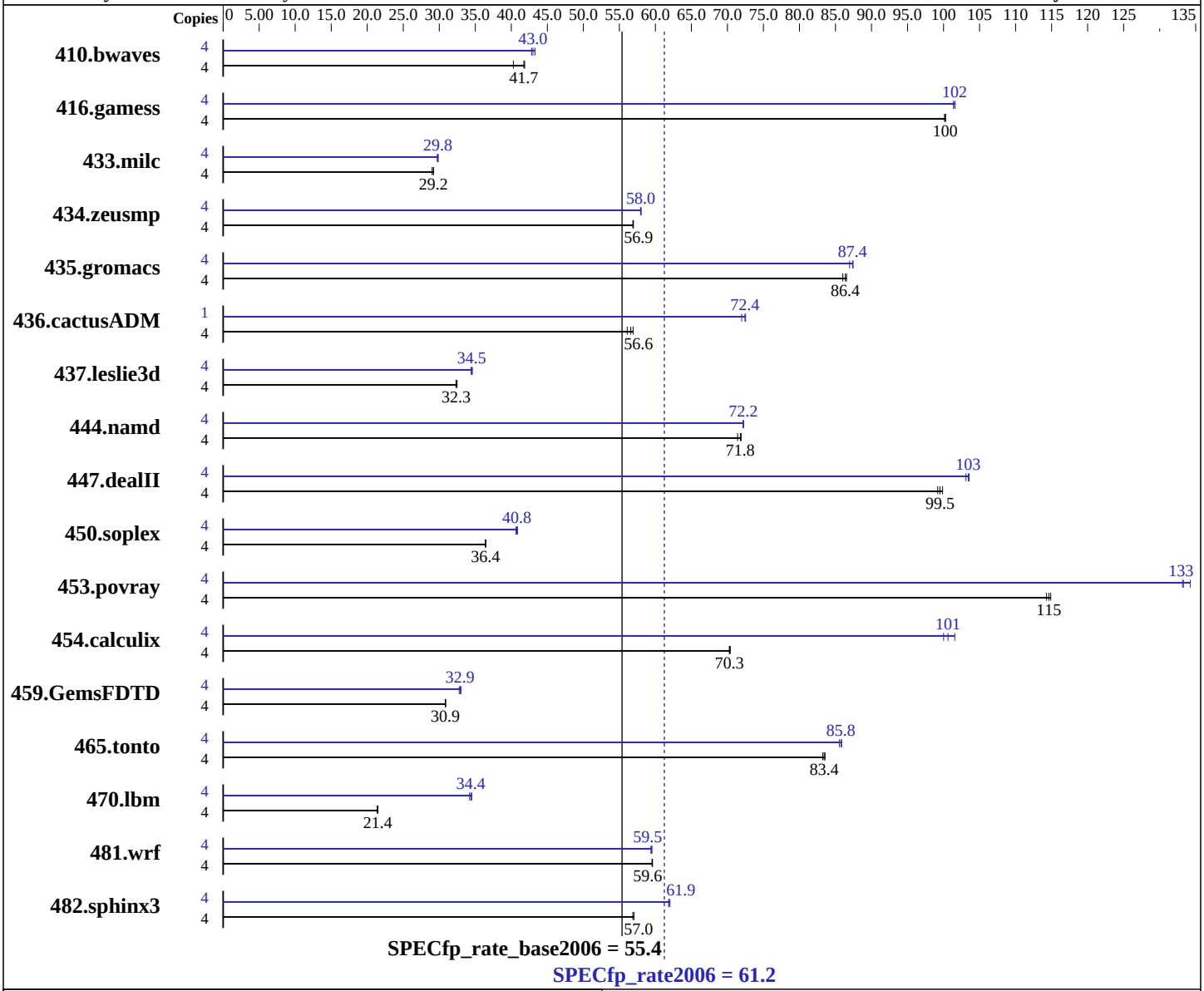
## Sun Fire X2250 (Intel Xeon X5272 3.4GHz)

**SPECfp®_rate2006 = 61.2**

**SPECfp_rate_base2006 = 55.4**

**CPU2006 license:** 6
**Test sponsor:** Sun Microsystems
**Tested by:** Sun Microsystems

**Test date:** Aug-2008
**Hardware Availability:** Aug-2008
**Software Availability:** Nov-2007




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5272 |
| CPU Characteristics: | |
| CPU MHz: | 3400 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 6 MB I+D on chip per chip |

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## Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070913 |
| Auto Parallel: | Yes |
| File System: | ReiserFS |
| System State: | Multi-user, run level 3 |
| Base Pointers: | 64-bit |
| Peak Pointers: | 32/64-bit |

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4*4GB Dual-rank PC2-6400 CL5-5-5 FB-DIMMs)
Disk Subsystem: SATA, 500 GB, 7200 RPM
Other Hardware: None

Other Software: Binutils 2.17.10.50

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | 1349 | 40.3 | **1302** | **41.7** | 1299 | 41.9 | 4 | 1256 | 43.3 | 1270 | 42.8 | **1264** | **43.0** |
| 416.gamess | 4 | **781** | **100** | 782 | 100 | 781 | 100 | 4 | 773 | 101 | 771 | 102 | **771** | **102** |
| 433.milc | 4 | 1266 | 29.0 | 1258 | 29.2 | **1258** | **29.2** | 4 | 1230 | 29.9 | **1232** | **29.8** | 1236 | 29.7 |
| 434.zeusmp | 4 | 640 | 56.9 | **639** | **56.9** | 639 | 56.9 | 4 | **628** | **58.0** | 628 | 57.9 | 627 | 58.0 |
| 435.gromacs | 4 | 330 | 86.5 | 332 | 86.0 | **331** | **86.4** | 4 | 328 | 87.0 | 327 | 87.4 | **327** | **87.4** |
| 436.cactusADM | 4 | 852 | 56.1 | **845** | **56.6** | 840 | 56.9 | 1 | 165 | 72.5 | 166 | 72.0 | **165** | **72.4** |
| 437.leslie3d | 4 | 1163 | 32.3 | **1163** | **32.3** | 1158 | 32.5 | 4 | 1092 | 34.4 | 1087 | 34.6 | **1090** | **34.5** |
| 444.namd | 4 | **447** | **71.8** | 446 | 71.9 | 449 | 71.4 | 4 | 444 | 72.2 | **444** | **72.2** | 445 | 72.2 |
| 447.dealII | 4 | 461 | 99.2 | 458 | 99.9 | **460** | **99.5** | 4 | 442 | 104 | 444 | 103 | **442** | **103** |
| 450.soplex | 4 | 916 | 36.4 | 915 | 36.5 | **916** | **36.4** | 4 | **818** | **40.8** | 816 | 40.9 | 821 | 40.6 |
| 453.povray | 4 | **186** | **115** | 185 | 115 | 186 | 114 | 4 | 160 | 133 | 158 | 134 | **160** | **133** |
| 454.calculix | 4 | 470 | 70.3 | **469** | **70.3** | 469 | 70.4 | 4 | 330 | 100 | **328** | **101** | 325 | 102 |
| 459.GemsFDTD | 4 | 1376 | 30.8 | **1376** | **30.9** | 1374 | 30.9 | 4 | 1286 | 33.0 | 1295 | 32.8 | **1290** | **32.9** |
| 465.tonto | 4 | 471 | 83.6 | **472** | **83.4** | 473 | 83.2 | 4 | 458 | 85.9 | 460 | 85.5 | **459** | **85.8** |
| 470.lbm | 4 | 2570 | 21.4 | **2563** | **21.4** | 2557 | 21.5 | 4 | **1598** | **34.4** | 1607 | 34.2 | 1592 | 34.5 |
| 481.wrf | 4 | 751 | 59.5 | **750** | **59.6** | 750 | 59.6 | 4 | **751** | **59.5** | 752 | 59.4 | 751 | 59.5 |
| 482.sphinx3 | 4 | **1367** | **57.0** | 1371 | 56.9 | 1367 | 57.0 | 4 | **1260** | **61.9** | 1257 | 62.0 | 1260 | 61.9 |

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

## Compiler Invocation Notes

```
OMP_NUM_THREADS set to number of cores
KMP_STACK_SIZE set to 64M
KMP_AFFINITY set to physical,0
```

## Submit Notes

```
The config file option 'submit' was used.
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.
'/usr/bin/taskset' used to bind benchmark copies to processors, for all tests,
except for 436.cactusADM peak.
```

## Platform Notes

```
Default BIOS configuration used (includes this settings):
Hardware Prefetch : Enabled; Adjacent Sector Prefetch : Disabled
```

## 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:
-fast

C++ benchmarks:
-fast

Continued on next page

## Base Optimization Flags (Continued)

Fortran benchmarks:
`-fast`

Benchmarks using both Fortran and C:
`-fast`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

433.milc: `icc`

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

450.soplex: `/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

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

437.leslie3d: `/opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib -I/opt/intel/fc/10.1.008/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`

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`

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## Peak Optimization Flags (Continued)

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.20090714.00.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.20090714.00.xml`



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

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