# SPEC® CFP2006 Result

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## Supermicro

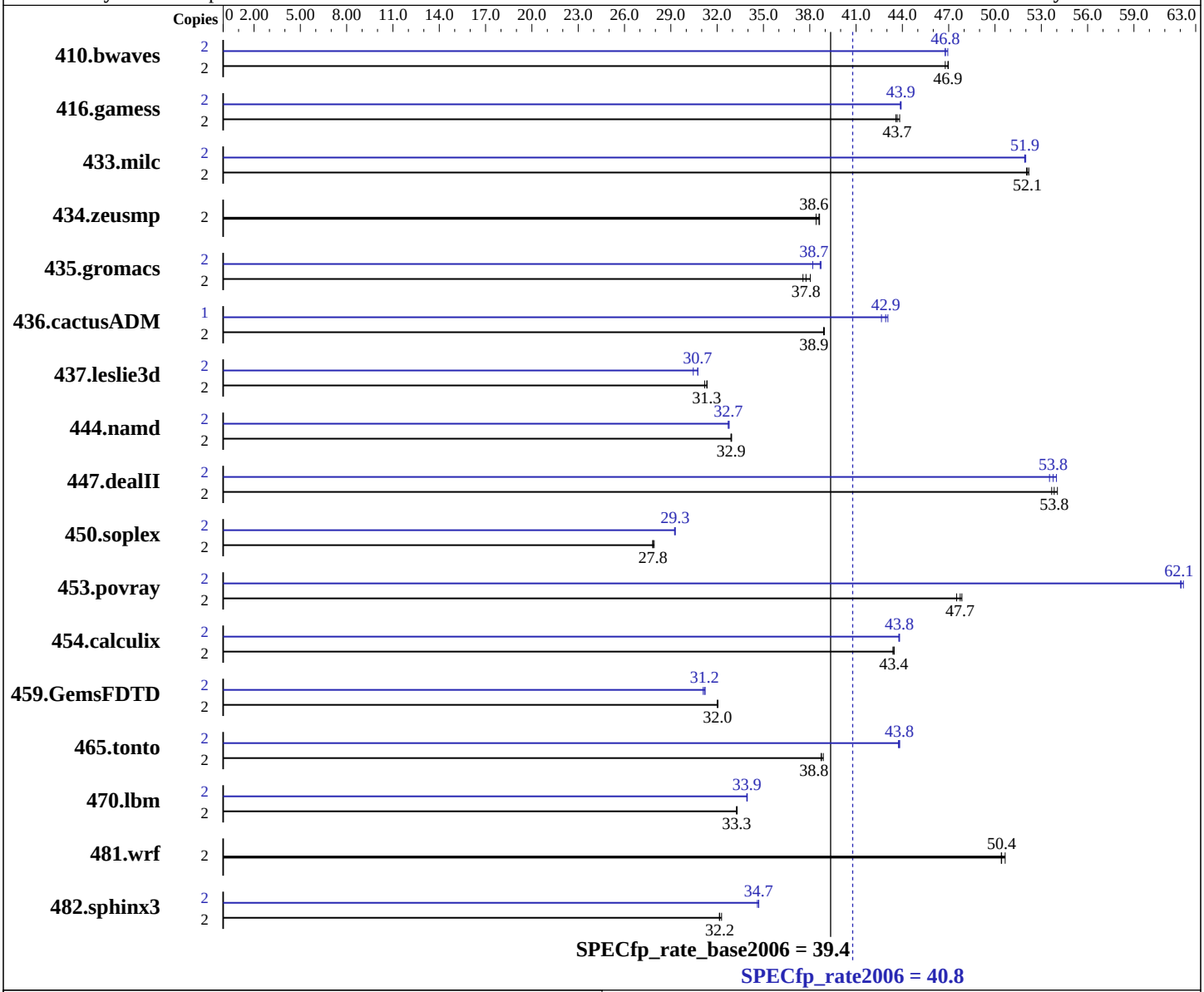
Motherboard X8SIU-F (Intel Pentium G6950, 2.80 GHz)

SPECfp®_rate2006 = 40.8

SPECfp_rate_base2006 = 39.4

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

**Test date:** Jun-2010
**Hardware Availability:** Apr-2010
**Software Availability:** Jan-2010




## Hardware

| | |
|---|---|
| CPU Name: | Intel Pentium G6950 |
| CPU Characteristics: | |
| CPU MHz: | 2800 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 cores/chip |
| CPU(s) orderable: | 1 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |

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## Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 11 (x86_64) Kernel 2.6.27.19-5-default |
| Compiler: | Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064 |
| Auto Parallel: | Yes |
| File System: | ext3 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 64-bit |

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L3 Cache: 3 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 2Rx8 DDR3-1333 UDIMM, ECC, CL9)
Disk Subsystem: 1 x 160 GB SATA II, 7200 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 2 | 579 | 47.0 | 581 | 46.8 | **579** | **46.9** | 2 | 581 | 46.8 | 579 | 46.9 | **581** | **46.8** |
| 416.gamess | 2 | **897** | **43.7** | 894 | 43.8 | 899 | 43.6 | 2 | 892 | 43.9 | **892** | **43.9** | 893 | 43.9 |
| 433.milc | 2 | **352** | **52.1** | 352 | 52.2 | 353 | 52.0 | 2 | **353** | **51.9** | 354 | 51.9 | 353 | 52.0 |
| 434.zeusmp | 2 | 471 | 38.6 | **472** | **38.6** | 474 | 38.4 | 2 | 471 | 38.6 | **472** | **38.6** | 474 | 38.4 |
| 435.gromacs | 2 | **378** | **37.8** | 375 | 38.0 | 380 | 37.6 | 2 | **369** | **38.7** | 369 | 38.7 | 374 | 38.2 |
| 436.cactusADM | 2 | 614 | 38.9 | 614 | 38.9 | **614** | **38.9** | 1 | 278 | 43.1 | **278** | **42.9** | 280 | 42.6 |
| 437.leslie3d | 2 | 600 | 31.3 | 603 | 31.2 | **600** | **31.3** | 2 | **612** | **30.7** | 611 | 30.8 | 617 | 30.5 |
| 444.namd | 2 | 487 | 32.9 | **487** | **32.9** | 488 | 32.9 | 2 | 489 | 32.8 | 490 | 32.7 | **490** | **32.7** |
| 447.dealII | 2 | 423 | 54.0 | 426 | 53.7 | **425** | **53.8** | 2 | **426** | **53.8** | 424 | 54.0 | 427 | 53.5 |
| 450.soplex | 2 | 597 | 27.9 | **599** | **27.8** | 599 | 27.8 | 2 | 570 | 29.3 | **570** | **29.3** | 570 | 29.2 |
| 453.povray | 2 | **223** | **47.7** | 222 | 47.9 | 224 | 47.5 | 2 | 172 | 62.0 | 171 | 62.2 | **171** | **62.1** |
| 454.calculix | 2 | 380 | 43.5 | **380** | **43.4** | 380 | 43.4 | 2 | 377 | 43.8 | **377** | **43.8** | 377 | 43.8 |
| 459.GemsFDTD | 2 | 663 | 32.0 | **663** | **32.0** | 662 | 32.1 | 2 | 680 | 31.2 | 682 | 31.1 | **681** | **31.2** |
| 465.tonto | 2 | 506 | 38.9 | 508 | 38.7 | **508** | **38.8** | 2 | **449** | **43.8** | 450 | 43.7 | 449 | 43.8 |
| 470.lbm | 2 | 825 | 33.3 | **826** | **33.3** | 826 | 33.3 | 2 | 809 | 34.0 | **810** | **33.9** | 810 | 33.9 |
| 481.wrf | 2 | 441 | 50.7 | 443 | 50.4 | **443** | **50.4** | 2 | 441 | 50.7 | 443 | 50.4 | **443** | **50.4** |
| 482.sphinx3 | 2 | 1213 | 32.1 | 1207 | 32.3 | **1212** | **32.2** | 2 | 1123 | 34.7 | 1126 | 34.6 | **1124** | **34.7** |

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.
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
```

## Platform Notes

```
Fan speed set to Full Speed in BIOS Setup.
As tested, the system used a Supermicro CSE-815TQ-330UB chassis.
The chassis is bundled with a PWS-333-1H20 power supply, a SNK-P0046P heatsink,
and 4 FAN-0086L4 cooling fans.
```

## General Notes

```
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
```

## Base Compiler Invocation

C benchmarks:
```
icc   -m64
```

C++ benchmarks:
```
icpc  -m64
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc   -m64 ifort -m64
```

## 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:
`-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch`

C++ benchmarks:
`-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch`

Fortran benchmarks:
`-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch`

Benchmarks using both Fortran and C:
`-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m64`

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m64`

450.soplex: `icpc -m32`

Fortran benchmarks:
`ifort -m64`

Benchmarks using both Fortran and C:
`icc -m64 ifort -m64`

## 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`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64 -nofor_main`
459.GemsFDTD: `-DSPEC_CPU_LP64`
465.tonto: `-DSPEC_CPU_LP64`

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## Peak Portability Flags (Continued)

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) -xSSSE3 -ipo -O3 -no-prec-div -static -fno-alias

470.lbm: -xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-ilp32

482.sphinx3: -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xSSSE3 -ipo -O3 -no-prec-div -static

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -opt-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3 -no-prec-div -static -unroll4 -auto

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# Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-ilp32`

436.cactusADM: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xSSSE3 -ipo -O3 -no-prec-div -static -unroll2 -opt-prefetch -parallel -auto-ilp32`

454.calculix: `-xSSSE3 -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-ic11.1-linux64-revE.20100915.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100915.xml`


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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 10:05:43 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 September 2010.