# SPEC® CFP2006 Result



## Supermicro

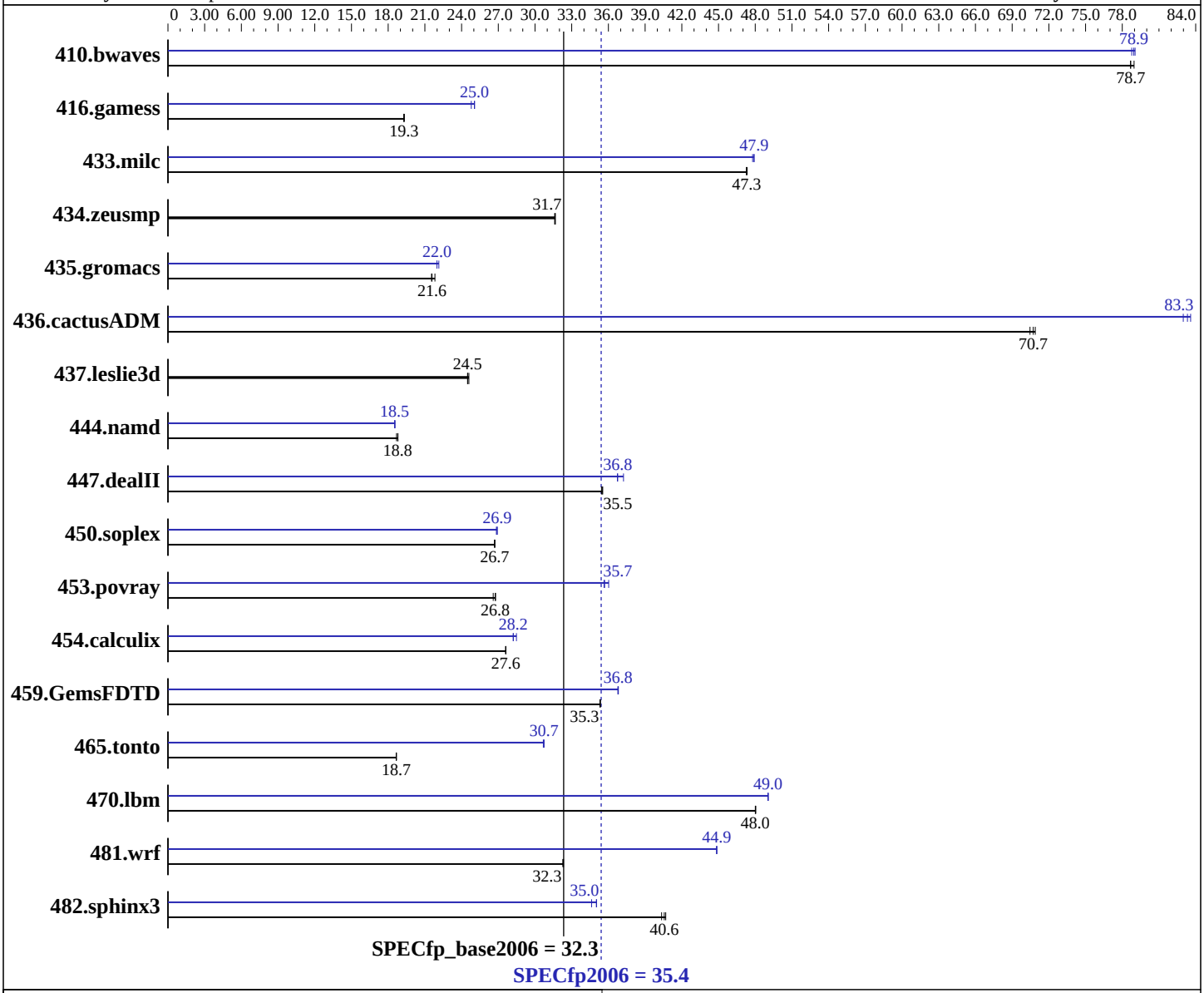
Motherboard X8SIU-F (Intel Xeon L3426, 1.86 GHz)

SPECfp®2006 = 35.4

SPECfp_base2006 = 32.3

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

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




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon L3426 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.20 GHz |
| CPU MHz: | 1867 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip, 2 threads/core |
| 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)<br>Kernel 2.6.27.19-5-default |
| Compiler: | Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1<br>Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064 |
| Auto Parallel: | Yes |
| File System: | ext3 |
| System State: | Run level 3 (multi-user) |

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| | | | |
|---|---|---|---|
| L3 Cache: | 8 MB I+D on chip per chip | Base Pointers: | 64-bit |
| Other Cache: | None | Peak Pointers: | 32/64-bit |
| Memory: | 16 GB (4 x 4 GB 2Rx8 DDR3-1333 RDIMM, ECC, CL9) | Other Software: | None |
| Disk Subsystem: | 1 x 160 GB SATA II, 7200 RPM | | |
| Other Hardware: | None | | |

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 173 | 78.7 | **173** | **78.7** | 172 | 79.0 | 173 | 78.8 | 172 | 79.0 | **172** | **78.9** |
| 416.gamess | 1013 | 19.3 | 1016 | 19.3 | **1015** | **19.3** | 781 | 25.1 | **782** | **25.0** | 790 | 24.8 |
| 433.milc | **194** | **47.3** | 194 | 47.3 | 194 | 47.3 | **192** | **47.9** | 192 | 47.9 | 192 | 47.8 |
| 434.zeusmp | 288 | 31.6 | 287 | 31.7 | **287** | **31.7** | 288 | 31.6 | 287 | 31.7 | **287** | **31.7** |
| 435.gromacs | 331 | 21.5 | 327 | 21.8 | **331** | **21.6** | 322 | 22.1 | **325** | **22.0** | 325 | 22.0 |
| 436.cactusADM | 169 | 70.9 | 170 | 70.5 | **169** | **70.7** | **143** | **83.3** | 144 | 83.0 | 143 | 83.6 |
| 437.leslie3d | 382 | 24.6 | 384 | 24.5 | **384** | **24.5** | 382 | 24.6 | 384 | 24.5 | **384** | **24.5** |
| 444.namd | 427 | 18.8 | 429 | 18.7 | **427** | **18.8** | 432 | 18.6 | 433 | 18.5 | **433** | **18.5** |
| 447.dealII | 322 | 35.5 | **322** | **35.5** | 323 | 35.4 | 307 | 37.2 | **311** | **36.8** | 311 | 36.7 |
| 450.soplex | **312** | **26.7** | 312 | 26.7 | 312 | 26.7 | **310** | **26.9** | 311 | 26.8 | 310 | 26.9 |
| 453.povray | 199 | 26.8 | **199** | **26.8** | 200 | 26.6 | **149** | **35.7** | 149 | 35.6 | 148 | 36.0 |
| 454.calculix | 299 | 27.6 | 299 | 27.6 | **299** | **27.6** | **292** | **28.2** | 292 | 28.2 | 290 | 28.5 |
| 459.GemsFDTD | 301 | 35.3 | 300 | 35.3 | **300** | **35.3** | **288** | **36.8** | 288 | 36.8 | 288 | 36.8 |
| 465.tonto | **527** | **18.7** | 528 | 18.7 | 527 | 18.7 | 320 | 30.7 | **320** | **30.7** | 321 | 30.7 |
| 470.lbm | 286 | 48.0 | 286 | 48.0 | **286** | **48.0** | 280 | 49.1 | 280 | 49.0 | **280** | **49.0** |
| 481.wrf | 346 | 32.3 | **346** | **32.3** | 346 | 32.3 | 249 | 44.8 | **249** | **44.9** | 249 | 44.9 |
| 482.sphinx3 | 479 | 40.7 | **480** | **40.6** | 483 | 40.3 | 563 | 34.6 | 556 | 35.0 | **557** | **35.0** |

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

## 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:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

## Peak Compiler Invocation

C benchmarks:
`icc -m64`

C++ benchmarks:
`icpc -m64`

Fortran benchmarks:
`ifort -m64`

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

## Peak Portability Flags

`Same as Base Portability Flags`

## Peak Optimization Flags

C benchmarks:

433.milc: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-ansi-alias`

470.lbm: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-parallel -ansi-alias -auto-ilp32`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32 -unroll2`

C++ benchmarks:

444.namd: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-fno-alias -auto-ilp32`

447.dealII: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-unroll2 -ansi-alias -scalar-rep- -auto-ilp32`

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## Peak Optimization Flags (Continued)

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-malloc-options=3 -auto-ilp32

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

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

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix

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`



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

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