# SPEC® CFP2006 Result

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## Fujitsu Siemens Computers

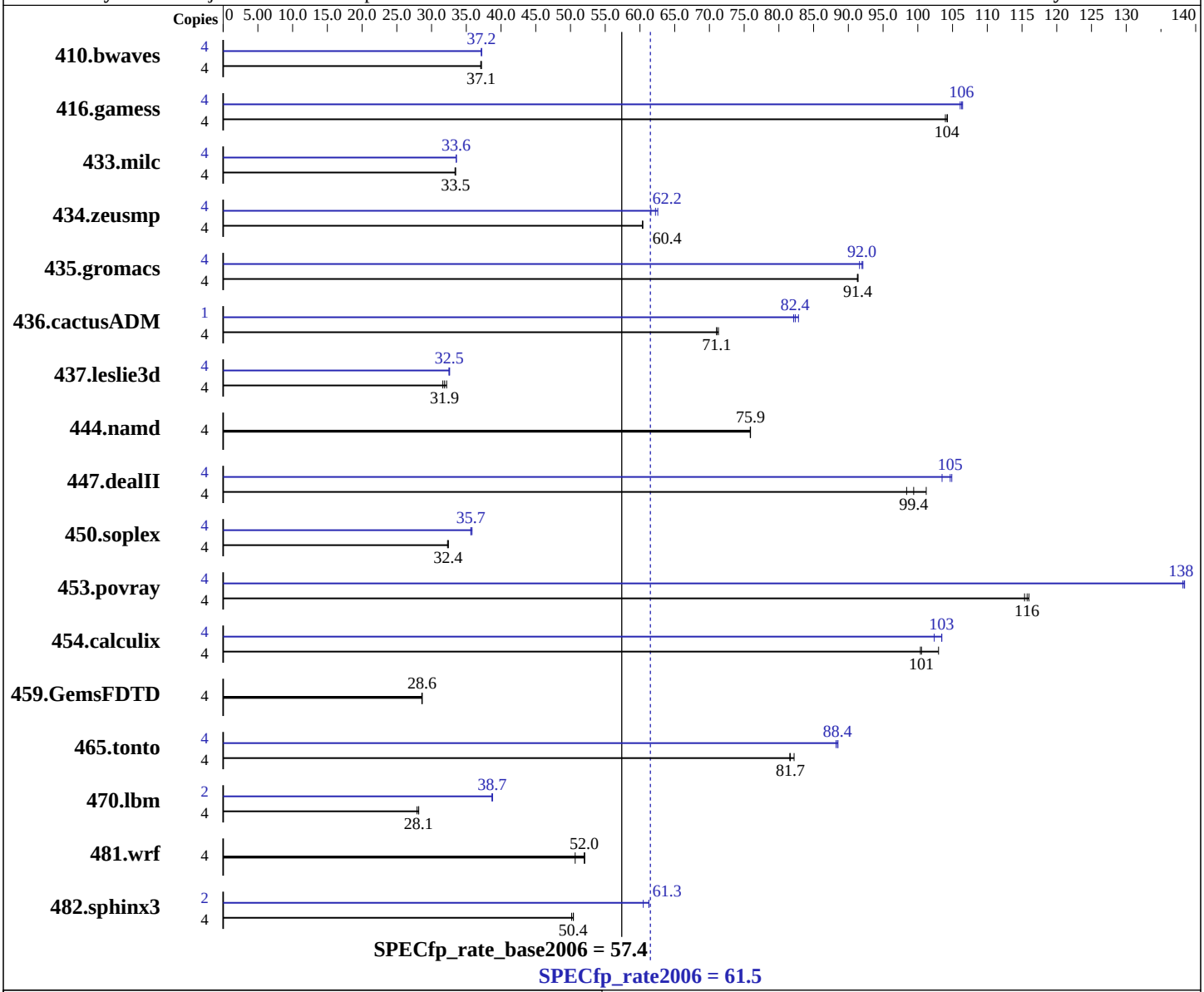
PRIMERGY RX300 S4, Intel Xeon X5270, 3.50 GHz

SPECfp®_rate2006 = 61.5

SPECfp_rate_base2006 = 57.4

**CPU2006 license:** 22
**Test sponsor:** Fujitsu Siemens Computers
**Tested by:** Fujitsu Siemens Computers

**Test date:** Sep-2008
**Hardware Availability:** Oct-2008
**Software Availability:** Nov-2008




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5270 |
| CPU Characteristics: | 1333 MHz system bus |
| CPU MHz: | 3500 |
| 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) SP2, Kernel 2.6.16.60-0.21-smp |
| Compiler: | Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 |
| Auto Parallel: | Yes |
| File System: | ext3 |
| 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 (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x SATA, 160 GB, 7200 rpm
Other Hardware: None

Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | 1466 | 37.1 | **1463** | **37.1** | 1462 | 37.2 | 4 | 1461 | 37.2 | 1462 | 37.2 | **1462** | **37.2** |
| 416.gamess | 4 | 751 | 104 | 753 | 104 | **752** | **104** | 4 | **737** | **106** | 738 | 106 | 736 | 106 |
| 433.milc | 4 | 1100 | 33.4 | 1098 | 33.5 | **1098** | **33.5** | 4 | 1095 | 33.5 | 1094 | 33.6 | **1094** | **33.6** |
| 434.zeusmp | 4 | **603** | **60.4** | 603 | 60.4 | 603 | 60.4 | 4 | 582 | 62.6 | 591 | 61.6 | **585** | **62.2** |
| 435.gromacs | 4 | **313** | **91.4** | 313 | 91.3 | 313 | 91.4 | 4 | **311** | **92.0** | 312 | 91.6 | 310 | 92.1 |
| 436.cactusADM | 4 | **673** | **71.1** | 670 | 71.3 | 673 | 71.0 | 1 | **145** | **82.4** | 144 | 82.8 | 146 | 82.1 |
| 437.leslie3d | 4 | **1179** | **31.9** | 1189 | 31.6 | 1169 | 32.2 | 4 | 1156 | 32.5 | **1156** | **32.5** | 1153 | 32.6 |
| 444.namd | 4 | **423** | **75.9** | 423 | 75.9 | 423 | 75.9 | 4 | **423** | **75.9** | 423 | 75.9 | 423 | 75.9 |
| 447.dealII | 4 | 465 | 98.4 | 452 | 101 | **460** | **99.4** | 4 | 442 | 103 | 436 | 105 | **437** | **105** |
| 450.soplex | 4 | 1033 | 32.3 | 1029 | 32.4 | **1030** | **32.4** | 4 | 935 | 35.7 | **935** | **35.7** | 931 | 35.8 |
| 453.povray | 4 | 184 | 115 | 183 | 116 | **184** | **116** | 4 | 154 | 138 | 154 | 138 | **154** | **138** |
| 454.calculix | 4 | **328** | **101** | 320 | 103 | 329 | 100 | 4 | **319** | **103** | 319 | 103 | 322 | 102 |
| 459.GemsFDTD | 4 | **1482** | **28.6** | 1481 | 28.7 | 1484 | 28.6 | 4 | **1482** | **28.6** | 1481 | 28.7 | 1484 | 28.6 |
| 465.tonto | 4 | 483 | 81.6 | 479 | 82.2 | **482** | **81.7** | 4 | **445** | **88.4** | 446 | 88.2 | 445 | 88.5 |
| 470.lbm | 4 | 1969 | 27.9 | **1954** | **28.1** | 1952 | 28.2 | 2 | 710 | 38.7 | **710** | **38.7** | 709 | 38.8 |
| 481.wrf | 4 | 882 | 50.7 | **860** | **52.0** | 858 | 52.1 | 4 | 882 | 50.7 | **860** | **52.0** | 858 | 52.1 |
| 482.sphinx3 | 4 | 1546 | 50.4 | 1554 | 50.2 | **1547** | **50.4** | 2 | 645 | 60.5 | 636 | 61.3 | **636** | **61.3** |

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

## Compiler Invocation Notes

```
All binaries were built with 64-bit mode except:
437.leslie3d, 450.soplex and 482.sphinx3 in peak
were built with 32-bit mode.
```

## Submit Notes

```
The config file option 'submit' was used.
 taskset has been used to bind processes to cores except
 for 436.cactusADM peak
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores (default)
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
```

## Platform Notes

```
BIOS configuration:
Memory Throttling = Enable
```

## General Notes

```
For information about Fujitsu Siemens Computers please see:
http://www.fujitsu-siemens.com
```

# 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

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## Base Portability Flags (Continued)

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:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

## Peak Compiler Invocation

C benchmarks (except as noted below):
icc

482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

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

450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include

Fortran benchmarks (except as noted below):
ifort

437.leslie3d: /opt/intel/Compiler/11.0/042/bin/ia32/ifort
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/042/ipp/ia32/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
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) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias

470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
-auto-ilp32

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: basepeak = yes

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

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

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

Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

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

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# Peak Optimization Flags (Continued)

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

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

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

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.11.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.08.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.11.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.08.xml


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