# SPEC® CFP2006 Result

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## Fujitsu

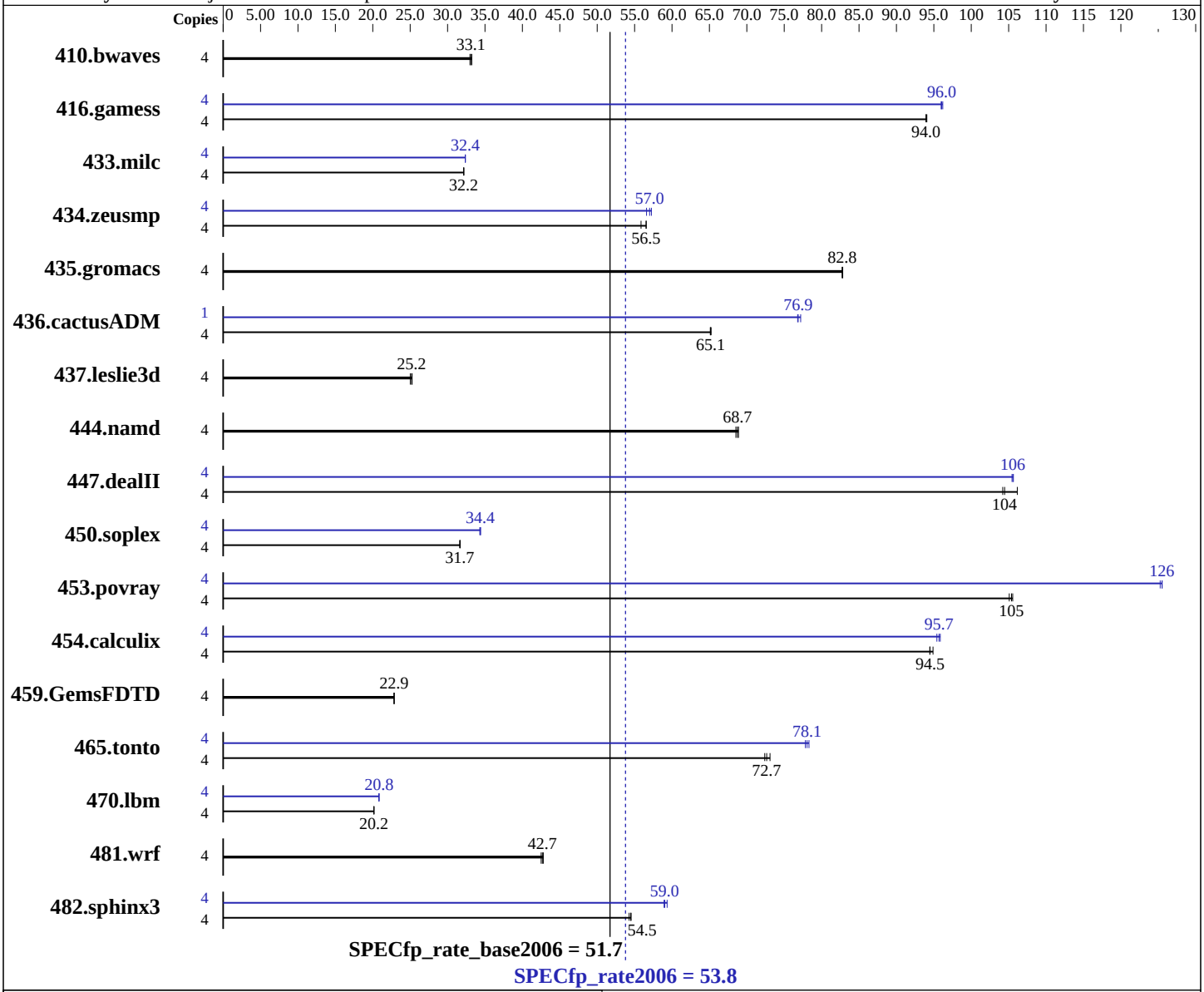
PRIMERGY RX100 S5, Intel Xeon X3380, 3.16 GHz

SPECfp®_rate2006 = 53.8

SPECfp_rate_base2006 = 51.7

**CPU2006 license:** 19
**Test sponsor:** Fujitsu
**Tested by:** Fujitsu Siemens Computers

**Test date:** Feb-2009
**Hardware Availability:** Apr-2009
**Software Availability:** Nov-2008




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X3380 |
| CPU Characteristics: | 1333 MHz system bus |
| CPU MHz: | 3167 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip |
| CPU(s) orderable: | 1 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 12 MB I+D on chip per chip, 6 MB shared / 2 cores |

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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 Package ID: l_cproc_b_11.0.066, l_fproc_b_11.0.066 |
| Auto Parallel: | Yes |
| File System: | ext3 |
| System State: | Multi-User Run Level 3 |
| Base Pointers: | 64-bit |

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L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB PC2-6400E, 2 rank, CL6-6-6, ECC)
Disk Subsystem: 1x SATA, 250 GB, 7200 rpm
Other Hardware: None

Peak Pointers: 32/64-bit
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 | 1636 | 33.2 | **1642** | **33.1** | 1648 | 33.0 | 4 | 1636 | 33.2 | **1642** | **33.1** | 1648 | 33.0 |
| 416.gamess | 4 | 833 | 94.1 | **834** | **94.0** | 834 | 94.0 | 4 | **815** | **96.0** | 814 | 96.2 | 816 | 96.0 |
| 433.milc | 4 | 1142 | 32.2 | **1142** | **32.2** | 1142 | 32.2 | 4 | 1134 | 32.4 | **1134** | **32.4** | 1135 | 32.4 |
| 434.zeusmp | 4 | **644** | **56.5** | 652 | 55.9 | 644 | 56.6 | 4 | **638** | **57.0** | 636 | 57.2 | 643 | 56.6 |
| 435.gromacs | 4 | 345 | 82.7 | **345** | **82.8** | 345 | 82.8 | 4 | 345 | 82.7 | **345** | **82.8** | 345 | 82.8 |
| 436.cactusADM | 4 | **734** | **65.1** | 734 | 65.1 | 733 | 65.2 | 1 | 156 | 76.8 | **155** | **76.9** | 155 | 77.2 |
| 437.leslie3d | 4 | **1493** | **25.2** | 1489 | 25.3 | 1503 | 25.0 | 4 | **1493** | **25.2** | 1489 | 25.3 | 1503 | 25.0 |
| 444.namd | 4 | 466 | 68.9 | **467** | **68.7** | 468 | 68.5 | 4 | 466 | 68.9 | **467** | **68.7** | 468 | 68.5 |
| 447.dealII | 4 | 439 | 104 | 431 | 106 | **438** | **104** | 4 | 434 | 105 | 433 | 106 | **433** | **106** |
| 450.soplex | 4 | 1053 | 31.7 | **1054** | **31.7** | 1055 | 31.6 | 4 | **970** | **34.4** | 972 | 34.3 | 970 | 34.4 |
| 453.povray | 4 | 203 | 105 | **202** | **105** | 202 | 106 | 4 | 170 | 125 | **170** | **126** | 170 | 126 |
| 454.calculix | 4 | 348 | 94.9 | 349 | 94.5 | **349** | **94.5** | 4 | 344 | 95.9 | **345** | **95.7** | 346 | 95.4 |
| 459.GemsFDTD | 4 | 1858 | 22.8 | **1857** | **22.9** | 1856 | 22.9 | 4 | 1858 | 22.8 | **1857** | **22.9** | 1856 | 22.9 |
| 465.tonto | 4 | 544 | 72.4 | 538 | 73.1 | **542** | **72.7** | 4 | **504** | **78.1** | 506 | 77.8 | 503 | 78.3 |
| 470.lbm | 4 | 2729 | 20.1 | **2727** | **20.2** | 2725 | 20.2 | 4 | 2642 | 20.8 | 2637 | 20.8 | **2637** | **20.8** |
| 481.wrf | 4 | 1051 | 42.5 | 1044 | 42.8 | **1047** | **42.7** | 4 | 1051 | 42.5 | 1044 | 42.8 | **1047** | **42.7** |
| 482.sphinx3 | 4 | 1430 | 54.5 | 1437 | 54.3 | **1431** | **54.5** | 4 | 1323 | 58.9 | 1314 | 59.3 | **1321** | **59.0** |

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.
 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
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
```

## Platform Notes

```
BIOS configuration:
Hardware Prefetch = Disable, Adjacent Sector Prefetch = Disable
```

## General Notes

```
The Fujitsu PRIMERGY RX100 S5 and the Fujitsu Siemens Computers PRIMERGY RX100 S5
are electronically equivalent.

For information about Fujitsu please visit: http://www.fujitsu.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
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: `icc -m32`

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

450.soplex: `icpc -m32`

Fortran benchmarks:
`ifort`

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`
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) -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: basepeak = yes

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

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

437.leslie3d: basepeak = yes

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:

Continued on next page

## Peak Optimization Flags (Continued)

435.gromacs: basepeak = yes

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.20090710.05.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.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.20090710.05.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.xml


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

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