# SPEC® CFP2006 Result

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## Fujitsu

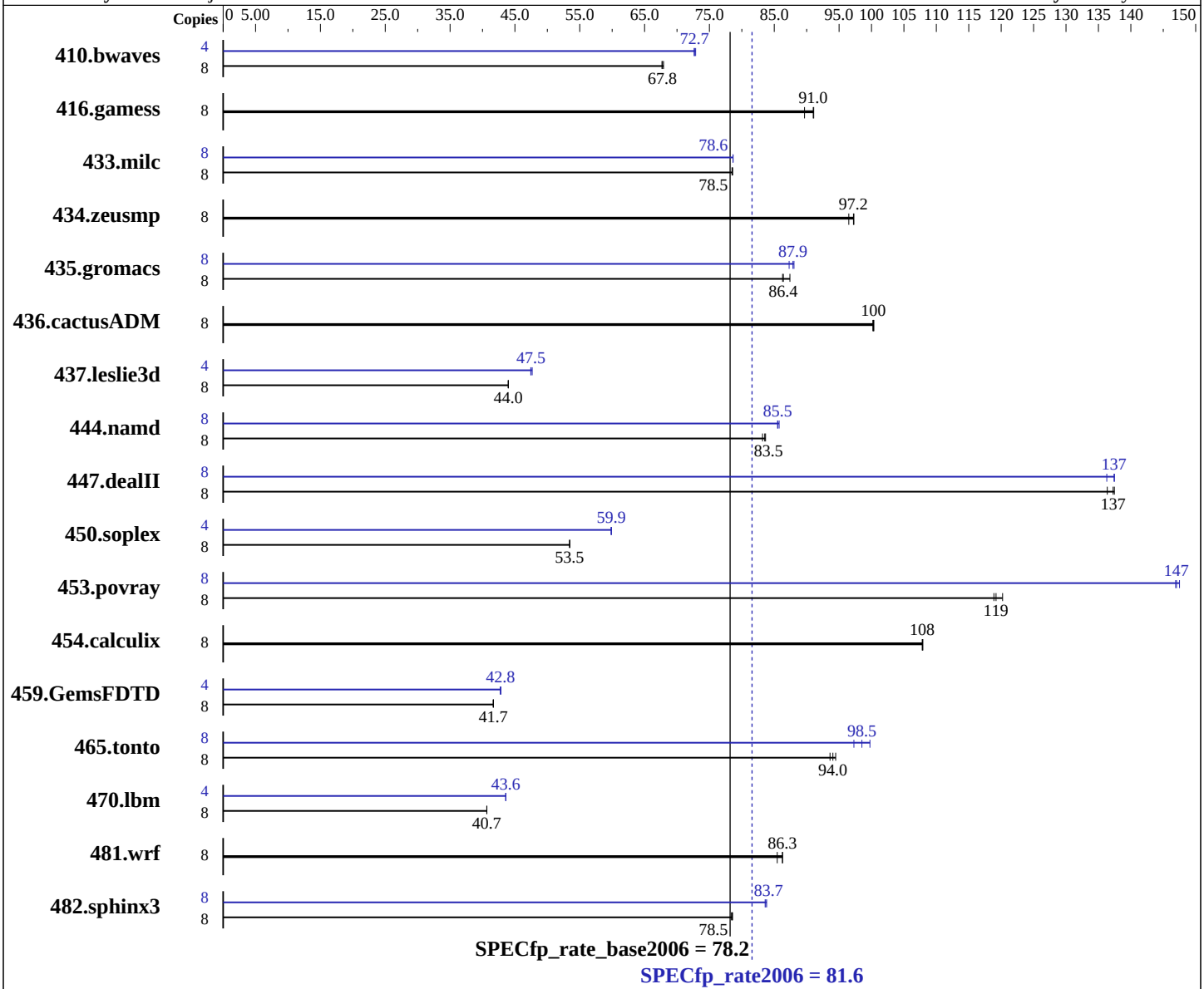
PRIMERGY TX100 S2, Intel Xeon X3450, 2.67 GHz

SPECfp®_rate2006 = 81.6

SPECfp_rate_base2006 = 78.2

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

**Test date:** Jun-2010
**Hardware Availability:** Aug-2010
**Software Availability:** May-2010




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X3450 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.20 GHz |
| CPU MHz: | 2667 |
| 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) with SP1, Kernel 2.6.32.12-0.7-default |
| Compiler: | Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064 |
| Auto Parallel: | No |
| File System: | ext3 |
| System State: | Multi-User Run Level 3 |

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4x4 GB PC3-10600E, 2 rank, CL9-9-9, ECC)
Disk Subsystem: 1 x SAS, 300 GB, 10000 RPM
Other Hardware: None

Base Pointers: 64-bit
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 | 8 | 1606 | 67.7 | **1604** | **67.8** | 1601 | 67.9 | 4 | **748** | **72.7** | 746 | 72.9 | 748 | 72.6 |
| 416.gamess | 8 | 1747 | 89.7 | **1721** | **91.0** | 1720 | 91.1 | 8 | 1747 | 89.7 | **1721** | **91.0** | 1720 | 91.1 |
| 433.milc | 8 | 936 | 78.5 | **935** | **78.5** | 935 | 78.6 | 8 | 934 | 78.6 | 934 | 78.6 | **934** | **78.6** |
| 434.zeusmp | 8 | 748 | 97.3 | 754 | 96.5 | **749** | **97.2** | 8 | 748 | 97.3 | 754 | 96.5 | **749** | **97.2** |
| 435.gromacs | 8 | 653 | 87.4 | 662 | 86.3 | **661** | **86.4** | 8 | **650** | **87.9** | 649 | 88.0 | 654 | 87.3 |
| 436.cactusADM | 8 | **953** | **100** | 954 | 100 | 953 | 100 | 8 | **953** | **100** | 954 | 100 | 953 | 100 |
| 437.leslie3d | 8 | **1709** | **44.0** | 1711 | 43.9 | 1709 | 44.0 | 4 | 792 | 47.4 | 789 | 47.7 | **792** | **47.5** |
| 444.namd | 8 | 767 | 83.7 | **768** | **83.5** | 771 | 83.2 | 8 | **750** | **85.5** | 748 | 85.8 | 750 | 85.5 |
| 447.dealII | 8 | 666 | 137 | 671 | 136 | **667** | **137** | 8 | **666** | **137** | 666 | 137 | 672 | 136 |
| 450.soplex | 8 | **1248** | **53.5** | 1249 | 53.4 | 1248 | 53.5 | 4 | 557 | 59.9 | 557 | 59.8 | **557** | **59.9** |
| 453.povray | 8 | 358 | 119 | 354 | 120 | **357** | **119** | 8 | 290 | 147 | **289** | **147** | 289 | 148 |
| 454.calculix | 8 | 612 | 108 | 612 | 108 | **612** | **108** | 8 | 612 | 108 | 612 | 108 | **612** | **108** |
| 459.GemsFDTD | 8 | 2038 | 41.6 | **2037** | **41.7** | 2036 | 41.7 | 4 | **992** | **42.8** | 993 | 42.7 | 990 | 42.9 |
| 465.tonto | 8 | **837** | **94.0** | 841 | 93.6 | 833 | 94.5 | 8 | 809 | 97.3 | 789 | 99.8 | **799** | **98.5** |
| 470.lbm | 8 | 2702 | 40.7 | **2703** | **40.7** | 2703 | 40.7 | 4 | 1260 | 43.6 | **1261** | **43.6** | 1261 | 43.6 |
| 481.wrf | 8 | **1036** | **86.3** | 1036 | 86.3 | 1046 | 85.5 | 8 | **1036** | **86.3** | 1036 | 86.3 | 1046 | 85.5 |
| 482.sphinx3 | 8 | 1989 | 78.4 | **1986** | **78.5** | 1984 | 78.6 | 8 | **1863** | **83.7** | 1860 | 83.8 | 1865 | 83.6 |

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.
 numactl was used to bind copies to the cores
```

## Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

## General Notes

```
For information about Fujitsu please visit: http://www.fujitsu.com
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

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static

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

## 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`
470.lbm: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

## 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) `-fno-alias -opt-prefetch`

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) `-opt-malloc-options=3 -ansi-alias -auto-ilp32`

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## Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -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-

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

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

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

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

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) -unroll4 -auto -inline-calloc -opt-malloc-options=3

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: basepeak = yes

454.calculix: basepeak = yes

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.20100708.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.20100708.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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