# SPEC® CFP2006 Result

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## Fujitsu

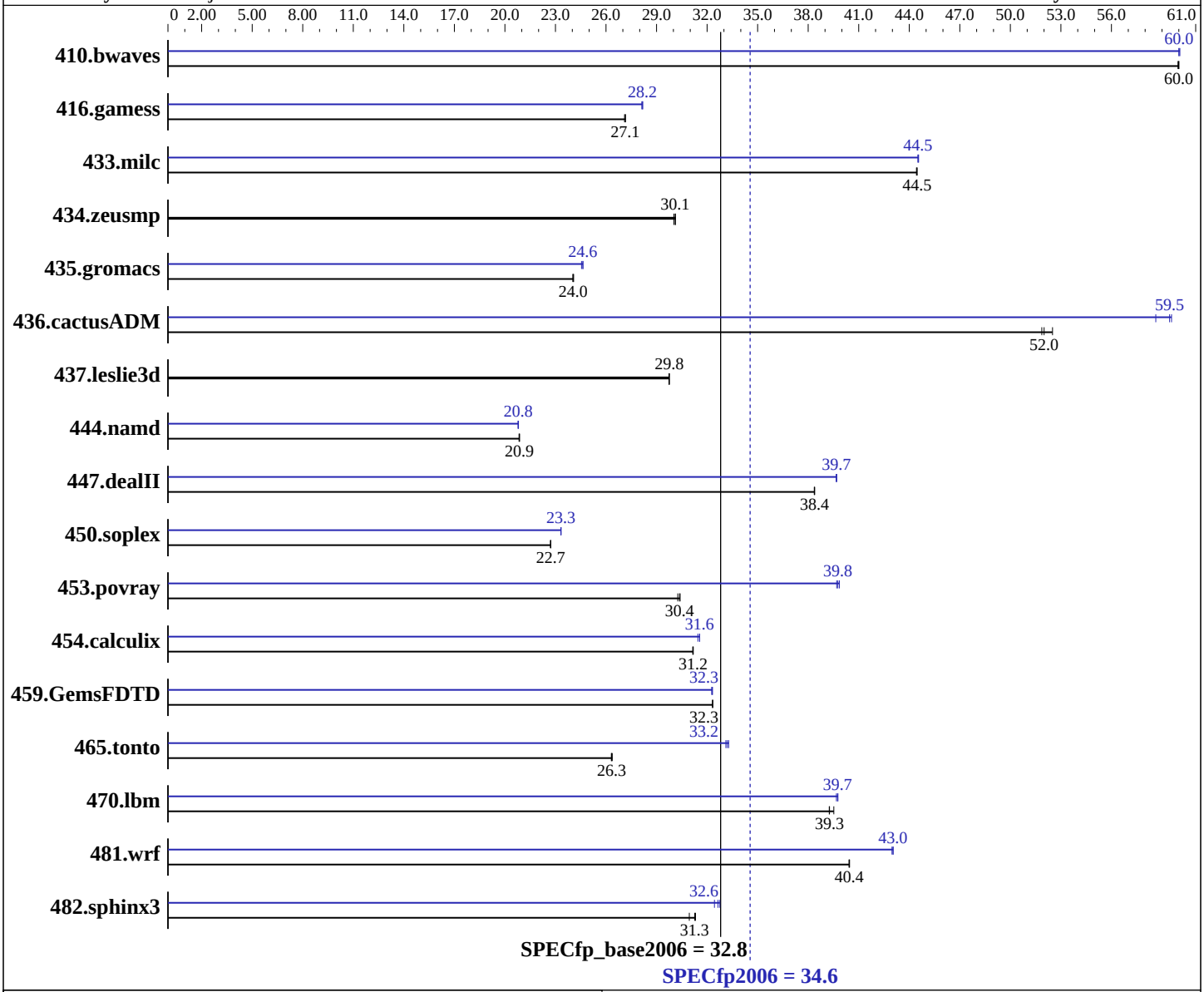
## CELSIUS W380, Intel Core i5-660

**SPECfp®2006 = 34.6**

**SPECfp_base2006 = 32.8**

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

**Test date:** Jan-2010
**Hardware Availability:** Jan-2010
**Software Availability:** Oct-2009




### Hardware

| | |
|---|---|
| CPU Name: | Intel Core i5-660 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.6 GHz |
| CPU MHz: | 3333 |
| 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++ and Fortran Compiler for IA32 and Intel 64, Version 11.1 Build 20091012 Package ID: l_cproc_p_11.1.059, l_cprof_p_11.1.059 |
| Auto Parallel: | Yes |
| File System: | ext3 |
| System State: | Multi-User Run Level 3 |

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (2x4 GB PC3-10600U, 2 rank, CL9)
Disk Subsystem: 1 x SATA II, 400 GB, 7200 rpm
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 226 | 60.0 | 227 | 59.9 | **227** | **60.0** | **226** | **60.0** | 226 | 60.0 | 226 | 60.1 |
| 416.gamess | **721** | **27.1** | 722 | 27.1 | 721 | 27.2 | 695 | 28.2 | 696 | 28.1 | **695** | **28.2** |
| 433.milc | 207 | 44.4 | 206 | 44.5 | **206** | **44.5** | 206 | 44.6 | 206 | 44.5 | **206** | **44.5** |
| 434.zeusmp | 302 | 30.1 | **302** | **30.1** | 303 | 30.0 | 302 | 30.1 | **302** | **30.1** | 303 | 30.0 |
| 435.gromacs | 297 | 24.1 | 297 | 24.0 | **297** | **24.0** | 290 | 24.6 | **290** | **24.6** | 291 | 24.5 |
| 436.cactusADM | **230** | **52.0** | 228 | 52.5 | 230 | 51.9 | 201 | 59.6 | 204 | 58.6 | **201** | **59.5** |
| 437.leslie3d | 316 | 29.8 | **316** | **29.8** | 316 | 29.7 | 316 | 29.8 | **316** | **29.8** | 316 | 29.7 |
| 444.namd | 385 | 20.8 | 384 | 20.9 | **384** | **20.9** | 385 | 20.8 | **386** | **20.8** | 386 | 20.8 |
| 447.dealII | **298** | **38.4** | 298 | 38.4 | 298 | 38.4 | **288** | **39.7** | 288 | 39.7 | 288 | 39.7 |
| 450.soplex | 367 | 22.7 | **367** | **22.7** | 367 | 22.7 | 357 | 23.3 | **358** | **23.3** | 358 | 23.3 |
| 453.povray | 175 | 30.4 | 176 | 30.3 | **175** | **30.4** | 133 | 39.9 | **134** | **39.8** | 134 | 39.7 |
| 454.calculix | **265** | **31.2** | 265 | 31.1 | 265 | 31.2 | **261** | **31.6** | 262 | 31.5 | 261 | 31.6 |
| 459.GemsFDTD | **328** | **32.3** | 328 | 32.3 | 328 | 32.3 | 328 | 32.3 | **328** | **32.3** | 329 | 32.3 |
| 465.tonto | 373 | 26.4 | **374** | **26.3** | 374 | 26.3 | 296 | 33.3 | **296** | **33.2** | 297 | 33.1 |
| 470.lbm | 348 | 39.5 | **350** | **39.3** | 350 | 39.3 | 346 | 39.8 | 346 | 39.7 | **346** | **39.7** |
| 481.wrf | 276 | 40.4 | 276 | 40.5 | **276** | **40.4** | 260 | 43.0 | **260** | **43.0** | 260 | 43.0 |
| 482.sphinx3 | **623** | **31.3** | 622 | 31.3 | 630 | 30.9 | **597** | **32.6** | 595 | 32.8 | 601 | 32.4 |

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 stacksize to unlimited prior to run

## General Notes

```
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
```

## Base Compiler Invocation

C benchmarks:

```
icc   -m64
```

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## Base Compiler Invocation (Continued)

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

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

Continued on next page

## 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- -auto-ilp32

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 -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

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## Peak Optimization Flags (Continued)

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-revD.20100119.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revD.20100119.xml`


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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 06:00:24 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 March 2010.