# SPEC® CFP2006 Result

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## Fujitsu

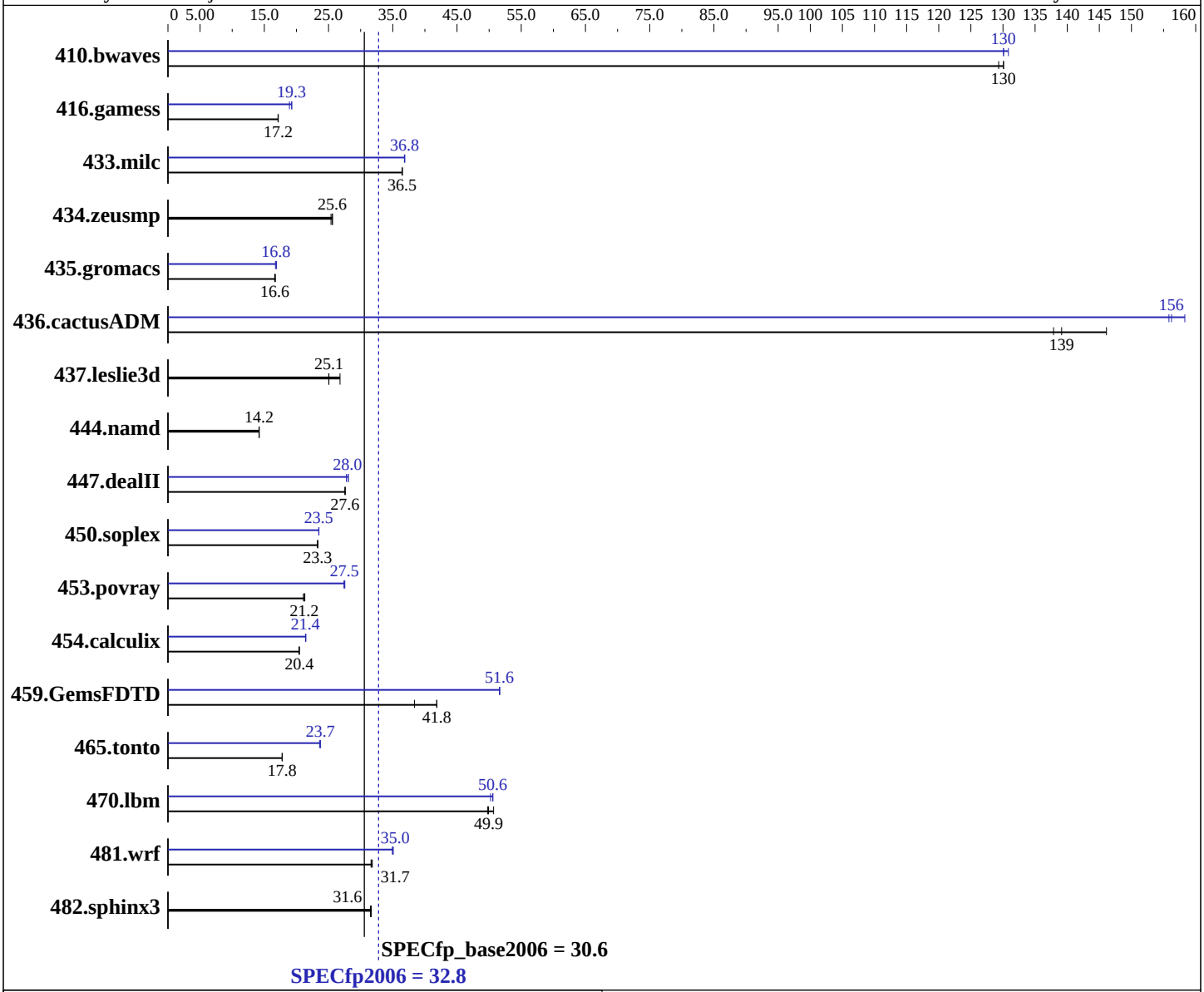
PRIMERGY TX300 S6, Intel Xeon L5630, 2.13 GHz

SPECfp®2006 = 32.8

SPECfp_base2006 = 30.6

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

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




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon L5630 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.40 GHz |
| CPU MHz: | 2133 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| 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 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: | Yes |
| File System: | ext3 |
| System State: | Multi-User Run Level 3 |

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem: 1 x SATA, 250 GB, 5.4 krpm
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 | 105 | 129 | 104 | 130 | **104** | **130** | **104** | **130** | 104 | 131 | 104 | 130 |
| 416.gamess | 1143 | 17.1 | **1141** | **17.2** | 1140 | 17.2 | 1016 | 19.3 | **1017** | **19.3** | 1035 | 18.9 |
| 433.milc | 251 | 36.5 | **252** | **36.5** | 252 | 36.4 | 249 | 36.8 | 249 | 36.9 | **249** | **36.8** |
| 434.zeusmp | 359 | 25.4 | 355 | 25.6 | **356** | **25.6** | 359 | 25.4 | 355 | 25.6 | **356** | **25.6** |
| 435.gromacs | 427 | 16.7 | **429** | **16.6** | 430 | 16.6 | 427 | 16.7 | **424** | **16.8** | 422 | 16.9 |
| 436.cactusADM | **85.9** | **139** | 86.7 | 138 | 81.8 | 146 | **76.5** | **156** | 75.5 | 158 | 76.7 | 156 |
| 437.leslie3d | 376 | 25.0 | **375** | **25.1** | 351 | 26.8 | 376 | 25.0 | **375** | **25.1** | 351 | 26.8 |
| 444.namd | 565 | 14.2 | 566 | 14.2 | **565** | **14.2** | 565 | 14.2 | 566 | 14.2 | **565** | **14.2** |
| 447.dealII | 415 | 27.6 | 415 | 27.6 | **415** | **27.6** | **408** | **28.0** | 412 | 27.8 | 407 | 28.1 |
| 450.soplex | 357 | 23.3 | 358 | 23.3 | **358** | **23.3** | **355** | **23.5** | 355 | 23.5 | 355 | 23.5 |
| 453.povray | 252 | 21.1 | 250 | 21.3 | **251** | **21.2** | **194** | **27.5** | 194 | 27.4 | 193 | 27.5 |
| 454.calculix | **404** | **20.4** | 404 | 20.4 | 403 | 20.5 | **385** | **21.4** | 384 | 21.5 | 385 | 21.4 |
| 459.GemsFDTD | 253 | 41.9 | **254** | **41.8** | 276 | 38.4 | 206 | 51.6 | 205 | 51.7 | **206** | **51.6** |
| 465.tonto | **553** | **17.8** | 553 | 17.8 | 554 | 17.8 | 415 | 23.7 | **415** | **23.7** | 417 | 23.6 |
| 470.lbm | 271 | 50.7 | **275** | **49.9** | 276 | 49.8 | **272** | **50.6** | 272 | 50.6 | 274 | 50.2 |
| 481.wrf | 351 | 31.8 | **352** | **31.7** | 353 | 31.6 | 320 | 34.9 | **319** | **35.0** | 318 | 35.1 |
| 482.sphinx3 | 618 | 31.5 | **617** | **31.6** | 616 | 31.7 | 618 | 31.5 | **617** | **31.6** | 616 | 31.7 |

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

## Platform Notes

The system automatically configures the memory to run at 1066 MHz.
BIOS configuration:
Data Reuse Optimization = Disable
Intel HT Technology = Disable

## General Notes

```
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
This result was measured on the PRIMERGY RX300 S6. The PRIMERGY TX300 S6
and the PRIMERGY RX300 S6 are electronically equivalent.

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

## 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
```

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## Base Optimization Flags (Continued)

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:
`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: `basepeak = yes`

C++ benchmarks:

Continued on next page

## Peak Optimization Flags (Continued)

444.namd: basepeak = yes

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 -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.20100330.02.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.20100330.02.xml


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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 09:38:56 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 14 April 2010.