# SPEC® CFP2006 Result
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## Fujitsu

PRIMERGY RX300 S6, Intel Xeon E5630, 2.53 GHz

$SPECfp^®2006 =$ 38.2
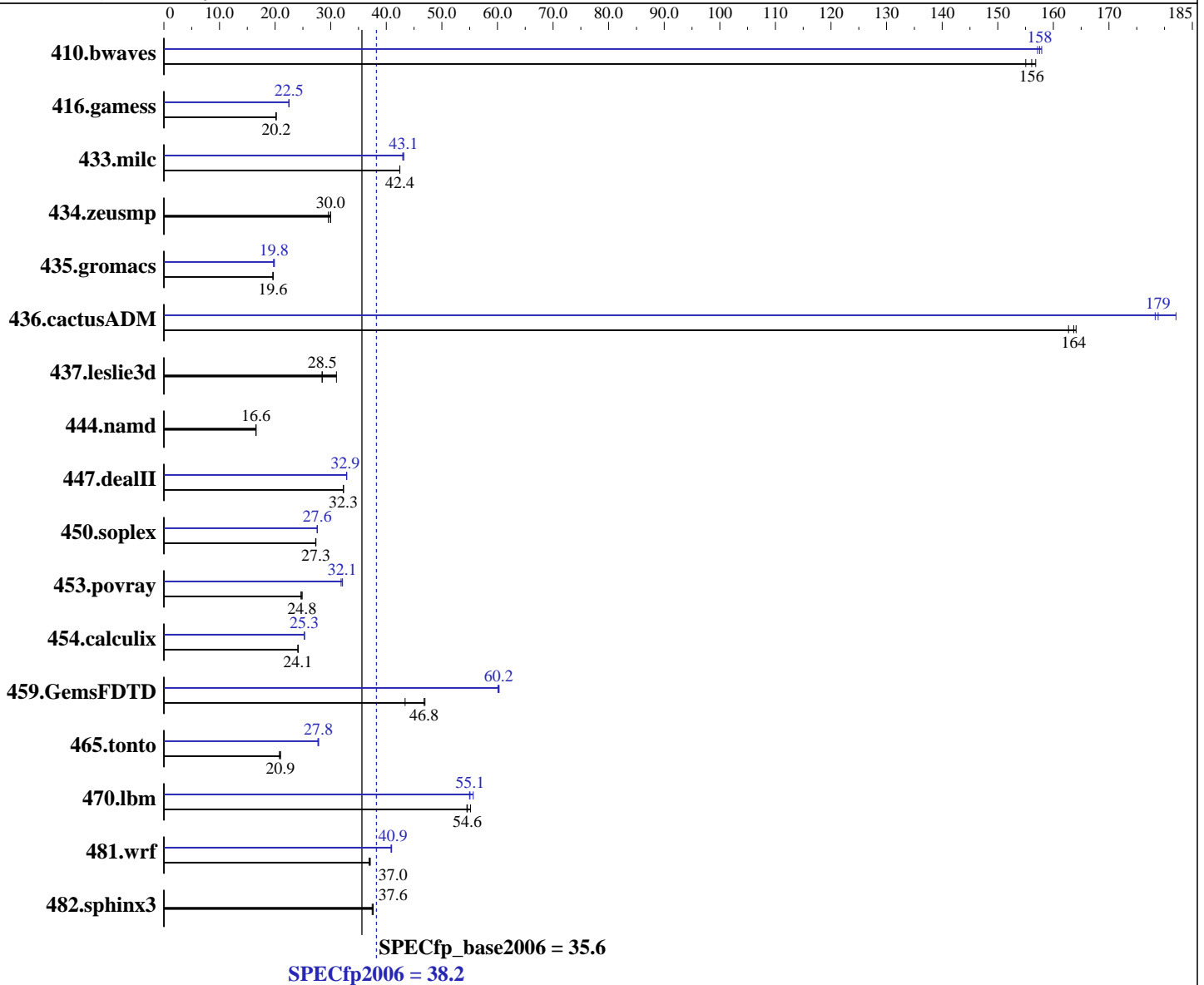
$SPECfp\_base2006 =$ 35.6

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

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

| Benchmark | Peak | Base |
|---|---|---|
| 410.bwaves | 158 | 156 |
| 416.gamess | 22.5 | 20.2 |
| 433.milc | 43.1 | 42.4 |
| 434.zeusmp | | 30.0 |
| 435.gromacs | 19.8 | 19.6 |
| 436.cactusADM | 179 | 164 |
| 437.leslie3d | | 28.5 |
| 444.namd | | 16.6 |
| 447.dealII | 32.9 | 32.3 |
| 450.soplex | 27.6 | 27.3 |
| 453.povray | 32.1 | 24.8 |
| 454.calculix | 25.3 | 24.1 |
| 459.GemsFDTD | 60.2 | 46.8 |
| 465.tonto | 27.8 | 20.9 |
| 470.lbm | 55.1 | 54.6 |
| 481.wrf | 40.9 | 37.0 |
| 482.sphinx3 | | 37.6 |

**SPECfp_base2006 = 35.6**
**SPECfp2006 = 38.2**

## Hardware

CPU Name: Intel Xeon E5630
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2533
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

**Continued on next page**

## 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

**Continued on next page**

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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 | **87.1** | **156** | 87.7 | 155 | 86.7 | 157 | 86.5 | 157 | 86.1 | 158 | **86.3** | **158** |
| 416.gamess | 971 | 20.2 | 969 | 20.2 | **970** | **20.2** | **870** | **22.5** | 869 | 22.5 | 872 | 22.5 |
| 433.milc | **216** | **42.4** | 216 | 42.4 | 216 | 42.4 | 213 | 43.1 | **213** | **43.1** | 214 | 43.0 |
| 434.zeusmp | **304** | **30.0** | 303 | 30.0 | 308 | 29.6 | **304** | **30.0** | 303 | 30.0 | 308 | 29.6 |
| 435.gromacs | **364** | **19.6** | 364 | 19.6 | 364 | 19.6 | 359 | 19.9 | 362 | 19.7 | **361** | **19.8** |
| 436.cactusADM | 73.4 | 163 | 72.8 | 164 | **73.0** | **164** | 67.0 | 178 | **66.8** | **179** | 65.6 | 182 |
| 437.leslie3d | **330** | **28.5** | 303 | 31.0 | 330 | 28.5 | **330** | **28.5** | 303 | 31.0 | 330 | 28.5 |
| 444.namd | 484 | 16.6 | 484 | 16.6 | **484** | **16.6** | 484 | 16.6 | 484 | 16.6 | **484** | **16.6** |
| 447.dealII | 354 | 32.3 | **354** | **32.3** | 354 | 32.3 | 348 | 32.9 | **348** | **32.9** | 348 | 32.9 |
| 450.soplex | 305 | 27.3 | 306 | 27.3 | **305** | **27.3** | 303 | 27.6 | **302** | **27.6** | 302 | 27.6 |
| 453.povray | 216 | 24.6 | 214 | 24.8 | **214** | **24.8** | **166** | **32.1** | 166 | 32.1 | 167 | 31.9 |
| 454.calculix | 342 | 24.1 | **342** | **24.1** | 341 | 24.2 | **327** | **25.3** | 326 | 25.3 | 327 | 25.3 |
| 459.GemsFDTD | 226 | 47.0 | **227** | **46.8** | 245 | 43.4 | 177 | 60.1 | 176 | 60.3 | **176** | **60.2** |
| 465.tonto | **470** | **20.9** | 474 | 20.8 | 469 | 21.0 | 355 | 27.7 | 354 | 27.8 | **354** | **27.8** |
| 470.lbm | 249 | 55.2 | **252** | **54.6** | 252 | 54.5 | 247 | 55.6 | **250** | **55.1** | 250 | 55.0 |
| 481.wrf | 301 | 37.1 | 303 | 36.9 | **302** | **37.0** | 273 | 40.9 | **273** | **40.9** | 273 | 41.0 |
| 482.sphinx3 | 520 | 37.5 | 518 | 37.7 | **518** | **37.6** | 520 | 37.5 | 518 | 37.7 | **518** | **37.6** |

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

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| SPECfp_base2006 = | 35.6 |

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## 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 TX300 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:

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# 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

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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`

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 05:08:08 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 March 2010.