# SPEC® CFP2006 Result

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## Fujitsu

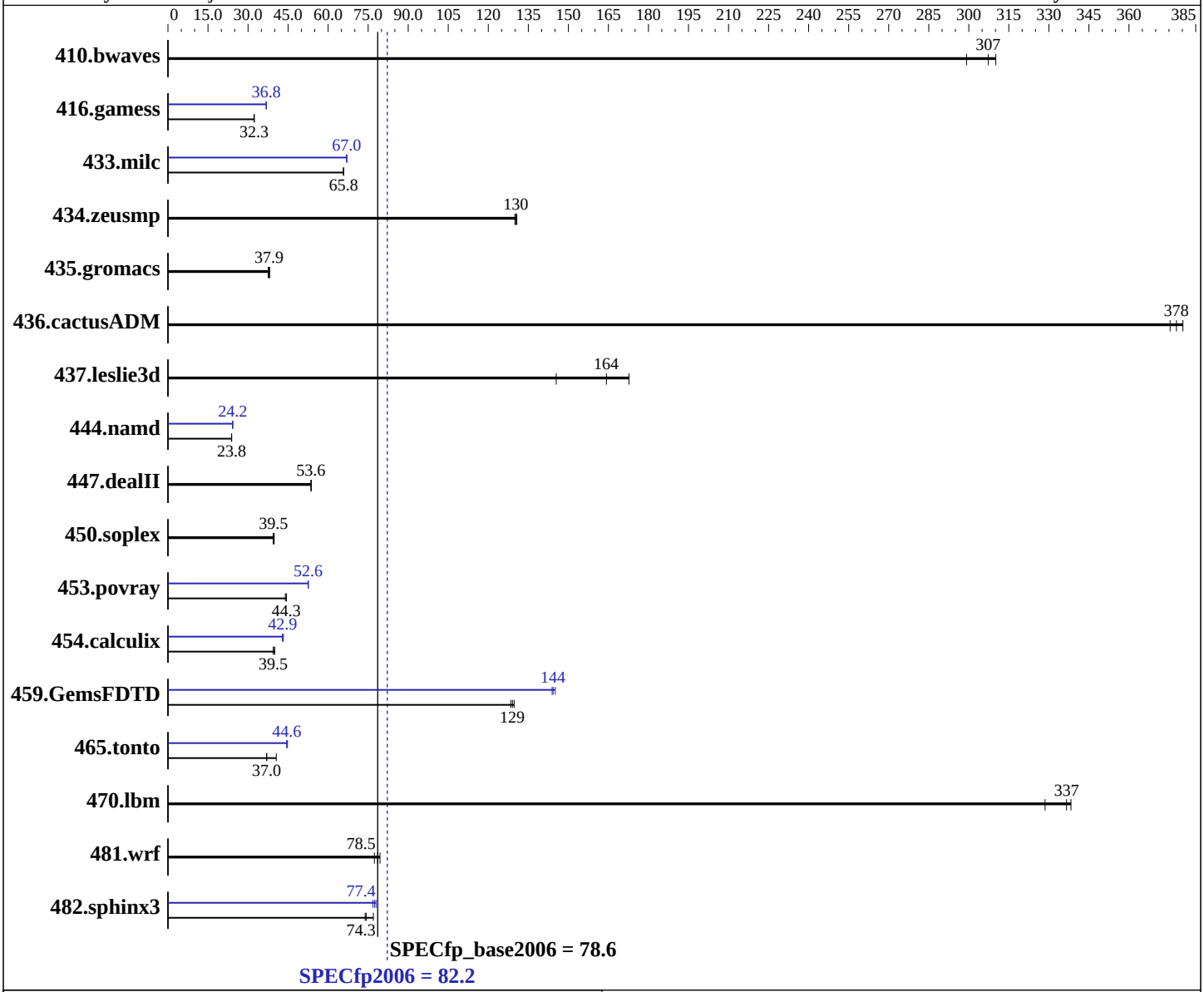
PRIMERGY CX270 S1, Intel Xeon E5-2643, 3.30 GHz

SPECfp®2006 = 82.2

SPECfp_base2006 = 78.6

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

**Test date:** May-2012
**Hardware Availability:** Jun-2012
**Software Availability:** Dec-2011




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2643 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.50 GHz |
| CPU MHz: | 3300 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip |
| CPU(s) orderable: | 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: | Red Hat Enterprise Linux Server release 6.2 (Santiago)<br>2.6.32-220.el6.x86_64 |
| Compiler: | C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;<br>Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux |
| Auto Parallel: | Yes |
| File System: | ext4 |

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| | |
|---|---|
| L3 Cache: | 10 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 128 GB (16 x 8 GB 2Rx4 PC3L-12800R-11, ECC) |
| Disk Subsystem: | 1 x SATA, 500 GB, 7200 RPM |
| Other Hardware: | None |

| | |
|---|---|
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | None |

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 45.4 | 299 | 43.8 | 310 | **44.2** | **307** | 45.4 | 299 | 43.8 | 310 | **44.2** | **307** |
| 416.gamess | **606** | **32.3** | 605 | 32.4 | 608 | 32.2 | 532 | 36.8 | **532** | **36.8** | 532 | 36.8 |
| 433.milc | 140 | 65.7 | 139 | 65.8 | **140** | **65.8** | 137 | 67.0 | 137 | 67.0 | **137** | **67.0** |
| 434.zeusmp | **69.8** | **130** | 70.0 | 130 | 69.6 | 131 | **69.8** | **130** | 70.0 | 130 | 69.6 | 131 |
| 435.gromacs | 190 | 37.6 | 187 | 38.1 | **189** | **37.9** | 190 | 37.6 | 187 | 38.1 | **189** | **37.9** |
| 436.cactusADM | 31.4 | 380 | 31.8 | 375 | **31.6** | **378** | 31.4 | 380 | 31.8 | 375 | **31.6** | **378** |
| 437.leslie3d | 64.6 | 145 | **57.2** | **164** | 54.4 | 173 | 64.6 | 145 | **57.2** | **164** | 54.4 | 173 |
| 444.namd | **336** | **23.8** | 336 | 23.8 | 336 | 23.9 | 331 | 24.3 | **331** | **24.2** | 331 | 24.2 |
| 447.dealII | **213** | **53.6** | 213 | 53.6 | 213 | 53.7 | **213** | **53.6** | 213 | 53.6 | 213 | 53.7 |
| 450.soplex | **211** | **39.5** | 209 | 39.8 | 211 | 39.5 | **211** | **39.5** | 209 | 39.8 | 211 | 39.5 |
| 453.povray | 121 | 44.0 | **120** | **44.3** | 120 | 44.4 | 101 | 52.5 | 101 | 52.6 | **101** | **52.6** |
| 454.calculix | 206 | 40.0 | 209 | 39.5 | **209** | **39.5** | 191 | 43.2 | 192 | 42.9 | **192** | **42.9** |
| 459.GemsFDTD | **82.2** | **129** | 81.8 | 130 | 82.6 | 128 | 73.7 | 144 | 73.1 | 145 | **73.5** | **144** |
| 465.tonto | 243 | 40.6 | 266 | 37.0 | **266** | **37.0** | **221** | **44.6** | 220 | 44.8 | 221 | 44.5 |
| 470.lbm | 40.6 | 338 | **40.8** | **337** | 41.8 | 329 | 40.6 | 338 | **40.8** | **337** | 41.8 | 329 |
| 481.wrf | **142** | **78.5** | 141 | 79.4 | 144 | 77.3 | **142** | **78.5** | 141 | 79.4 | 144 | 77.3 |
| 482.sphinx3 | **262** | **74.3** | 264 | 73.9 | 253 | 77.0 | 250 | 77.9 | 254 | 76.8 | **252** | **77.4** |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

## Platform Notes

```
BIOS configuration:
Intel HT Technology = Disable
```

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"
OMP_NUM_THREADS = "8"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 This result was measured on the PRIMERGY CX250 S1. The PRIMERGY CX250 S1
 and the PRIMERGY CX270 S1 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:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

## 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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel

Continued on next page

## Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.01.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.01.xml

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For other inquiries, please contact webmaster@spec.org.

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