# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Fujitsu

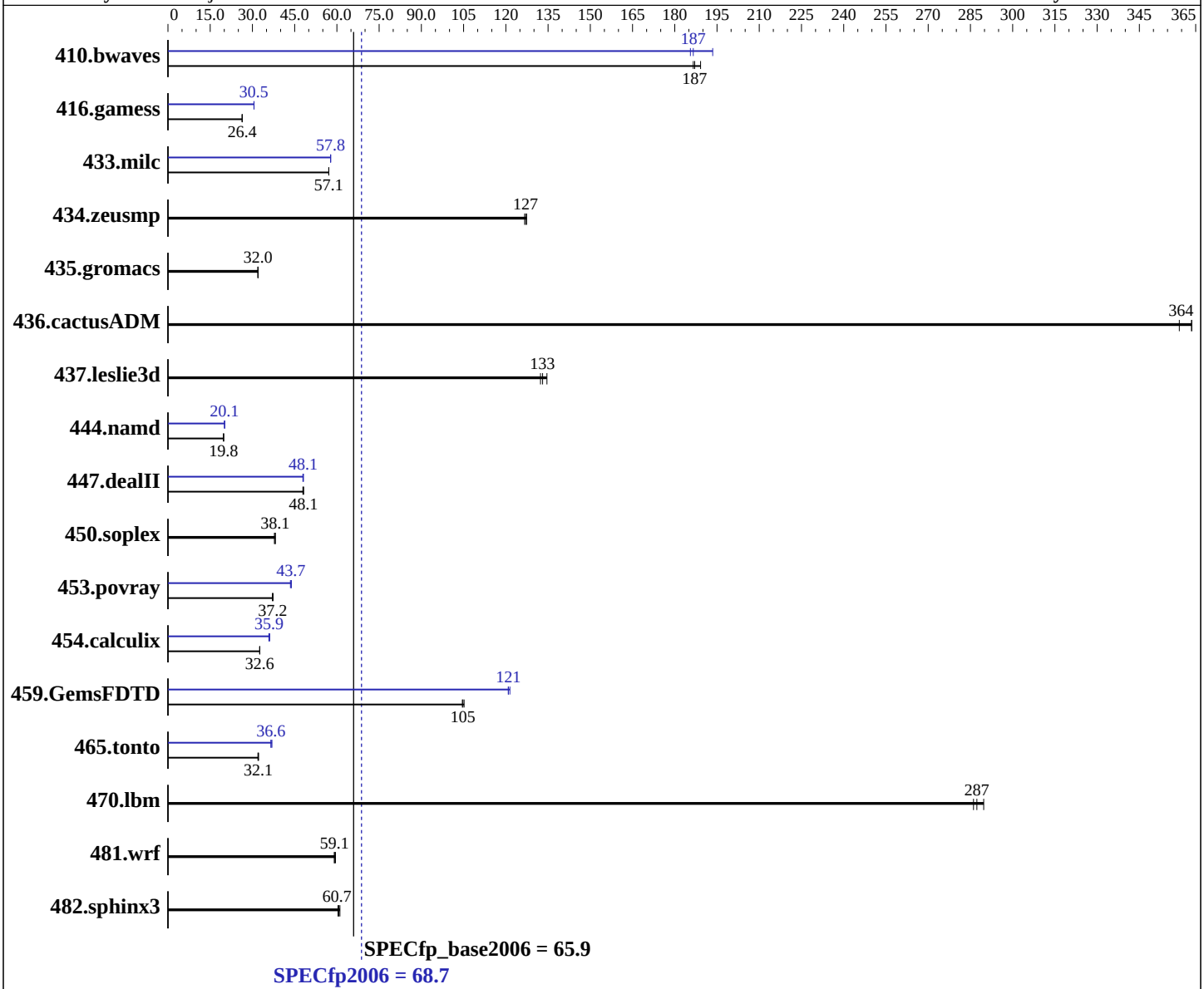
PRIMERGY BX920 S3, Intel Xeon E5-2450, 2.10 GHz

SPECfp®2006 = 68.7

SPECfp_base2006 = 65.9

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

**Test date:** Apr-2012
**Hardware Availability:** May-2012
**Software Availability:** Feb-2012




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2450 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.90 GHz |
| CPU MHz: | 2100 |
| FPU: | Integrated |
| CPU(s) enabled: | 16 cores, 2 chips, 8 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: | Red Hat Enterprise Linux Server release 6.2 (Santiago)<br>2.6.32-220.el6.x86_64 |
| Compiler: | C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux;<br>Fortran: Version 12.1.0.293 of Intel Fortran Studio XE for Linux |
| Auto Parallel: | Yes |
| File System: | ext4 |

Continued on next page

# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2450, 2.10 GHz

SPECfp2006 = 68.7

SPECfp_base2006 = 65.9

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

**Test date:** Apr-2012
**Hardware Availability:** May-2012
**Software Availability:** Feb-2012

| | |
|---|---|
| L3 Cache: | 20 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 96 GB (12 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 | **72.6** | **187** | 72.8 | 187 | 71.8 | 189 | 70.2 | 193 | 73.2 | 186 | **72.8** | **187** |
| 416.gamess | 742 | 26.4 | **742** | **26.4** | 743 | 26.3 | **641** | **30.5** | 641 | 30.5 | 640 | 30.6 |
| 433.milc | **161** | **57.1** | 161 | 57.1 | 161 | 57.1 | **159** | **57.8** | 159 | 57.8 | 159 | 57.8 |
| 434.zeusmp | **71.6** | **127** | 71.8 | 127 | 71.4 | 127 | **71.6** | **127** | 71.8 | 127 | 71.4 | 127 |
| 435.gromacs | 224 | 31.9 | 223 | 32.0 | **223** | **32.0** | 224 | 31.9 | 223 | 32.0 | **223** | **32.0** |
| 436.cactusADM | **32.9** | **364** | 32.9 | 364 | 33.3 | 359 | **32.9** | **364** | 32.9 | 364 | 33.3 | 359 |
| 437.leslie3d | 69.8 | 135 | **70.6** | **133** | 71.0 | 132 | 69.8 | 135 | **70.6** | **133** | 71.0 | 132 |
| 444.namd | 406 | 19.7 | **406** | **19.8** | 406 | 19.8 | 399 | 20.1 | **399** | **20.1** | 399 | 20.1 |
| 447.dealII | 239 | 47.9 | 238 | 48.2 | **238** | **48.1** | **238** | **48.1** | 239 | 47.9 | 238 | 48.1 |
| 450.soplex | **219** | **38.1** | 219 | 38.1 | 221 | 37.8 | **219** | **38.1** | 219 | 38.1 | 221 | 37.8 |
| 453.povray | 143 | 37.3 | **143** | **37.2** | 143 | 37.1 | **122** | **43.7** | 122 | 43.5 | 121 | 43.8 |
| 454.calculix | **253** | **32.6** | 253 | 32.6 | 253 | 32.6 | **230** | **35.9** | 228 | 36.1 | 230 | 35.8 |
| 459.GemsFDTD | 101 | 105 | 101 | 105 | **101** | **105** | 87.8 | 121 | **87.8** | **121** | 87.4 | 121 |
| 465.tonto | **307** | **32.1** | 306 | 32.2 | 308 | 32.0 | **269** | **36.6** | 266 | 36.9 | 269 | 36.6 |
| 470.lbm | **47.8** | **287** | 48.0 | 286 | 47.4 | 290 | **47.8** | **287** | 48.0 | 286 | 47.4 | 290 |
| 481.wrf | **189** | **59.1** | 189 | 59.1 | 188 | 59.5 | **189** | **59.1** | 189 | 59.1 | 188 | 59.5 |
| 482.sphinx3 | 319 | 61.1 | **321** | **60.7** | 323 | 60.4 | 319 | 61.1 | **321** | **60.7** | 323 | 60.4 |

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"
```

## Platform Notes

```
BIOS configuration:
Intel HT Technology = Disable
Frequency Floor Override = Enable
```

## 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"
```

Continued on next page

## General Notes (Continued)

```
OMP_NUM_THREADS = "16"

 Binaries compiled on a system with 1x E3-1270v2 CPU + 32 GB
 memory using RHEL6.2
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 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
```

Continued on next page

## Base Optimization Flags (Continued)

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: `basepeak = yes`

C++ benchmarks:

Continued on next page

## Peak Optimization Flags (Continued)

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: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

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

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: -xSSE4.2(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.20120320.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.20120320.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.


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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 08:35:51 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 June 2012.