# SPEC® CFP2006 Result

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## Fujitsu

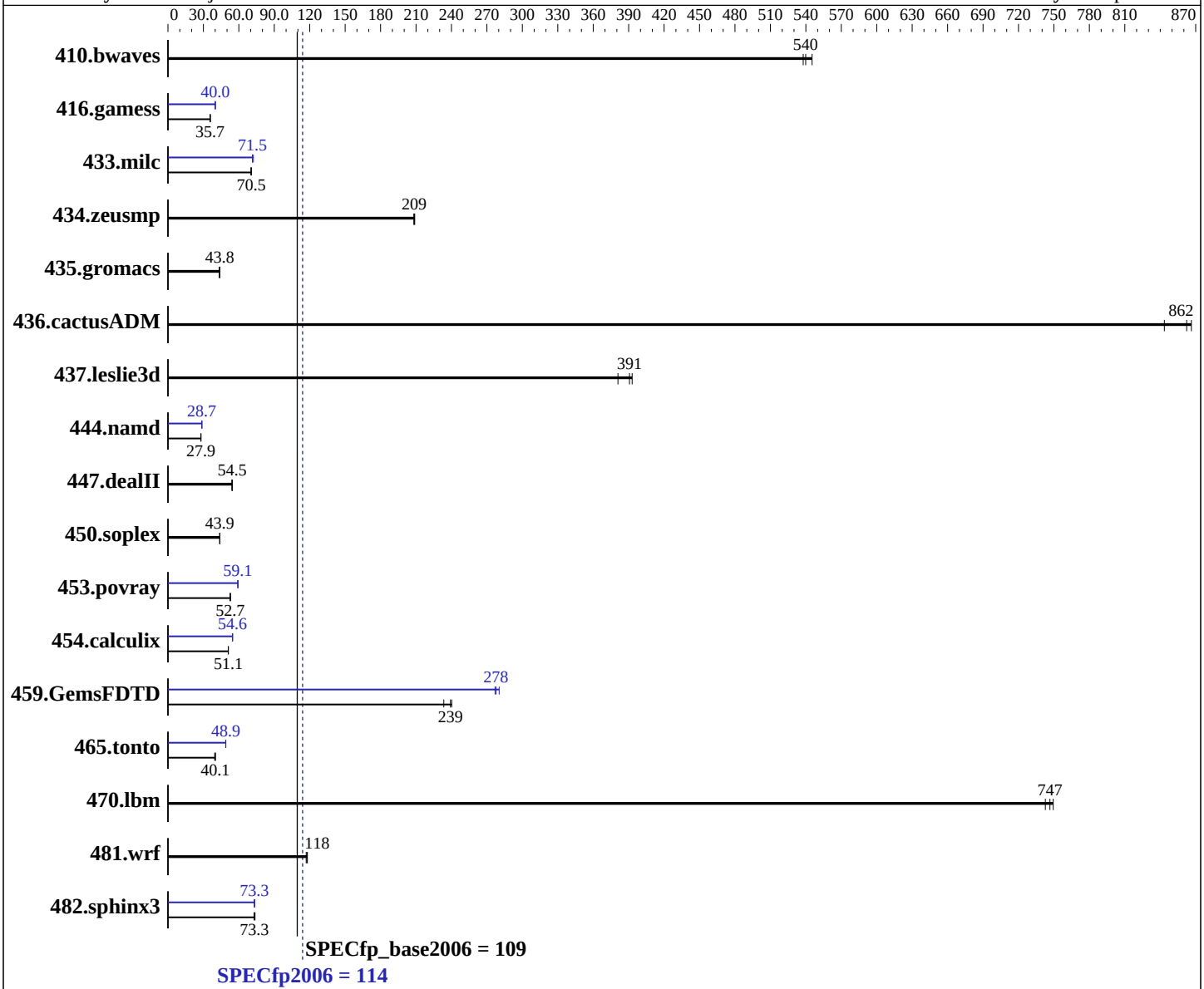
PRIMERGY BX2560 M1, Intel Xeon E5-2660 v3, 2.6 GHz

SPECfp®2006 = 114

SPECfp_base2006 = 109

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

**Test date:** Nov-2014
**Hardware Availability:** Sep-2014
**Software Availability:** Sep-2014




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2660 v3 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.30 GHz |
| CPU MHz: | 2600 |
| FPU: | Integrated |
| CPU(s) enabled: | 20 cores, 2 chips, 10 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1,2 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: | Red Hat Enterprise Linux Server release 7.0 (Maipo)<br>Kernel 3.10.0-123.8.1.el7.x86_64 |
| Compiler: | C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;<br>Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux |
| Auto Parallel: | Yes |
| File System: | xfs |

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L3 Cache: 25 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
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 | 24.9 | 545 | **25.2** | **540** | 25.3 | 538 | 24.9 | 545 | **25.2** | **540** | 25.3 | 538 |
| 416.gamess | 550 | 35.6 | 545 | 35.9 | **549** | **35.7** | **489** | **40.0** | 487 | 40.2 | 490 | 39.9 |
| 433.milc | 131 | 70.3 | 130 | 70.6 | **130** | **70.5** | **128** | **71.5** | 128 | 71.5 | 127 | 72.3 |
| 434.zeusmp | 43.7 | 208 | **43.6** | **209** | 43.6 | 209 | 43.7 | 208 | **43.6** | **209** | 43.6 | 209 |
| 435.gromacs | 163 | 43.9 | **163** | **43.8** | 164 | 43.4 | 163 | 43.9 | **163** | **43.8** | 164 | 43.4 |
| 436.cactusADM | 13.8 | 866 | 14.2 | 843 | **13.9** | **862** | 13.8 | 866 | 14.2 | 843 | **13.9** | **862** |
| 437.leslie3d | 23.9 | 393 | **24.1** | **391** | 24.7 | 381 | 23.9 | 393 | **24.1** | **391** | 24.7 | 381 |
| 444.namd | 288 | 27.9 | **288** | **27.9** | 287 | 27.9 | **279** | **28.7** | 280 | 28.7 | 279 | 28.7 |
| 447.dealII | 212 | 54.1 | 210 | 54.5 | **210** | **54.5** | 212 | 54.1 | 210 | 54.5 | **210** | **54.5** |
| 450.soplex | 190 | 43.9 | 191 | 43.8 | **190** | **43.9** | 190 | 43.9 | 191 | 43.8 | **190** | **43.9** |
| 453.povray | 101 | 52.9 | **101** | **52.7** | 101 | 52.7 | 90.1 | 59.1 | **90.0** | **59.1** | 89.7 | 59.3 |
| 454.calculix | 161 | 51.1 | 162 | 51.1 | **161** | **51.1** | **151** | **54.6** | 151 | 54.5 | 150 | 54.9 |
| 459.GemsFDTD | 45.4 | 234 | 44.2 | 240 | **44.4** | **239** | **38.2** | **278** | 38.3 | 277 | 37.8 | 280 |
| 465.tonto | **246** | **40.1** | 245 | 40.1 | 249 | 39.6 | 201 | 48.8 | **201** | **48.9** | 201 | 49.0 |
| 470.lbm | **18.4** | **747** | 18.5 | 743 | 18.3 | 749 | **18.4** | **747** | 18.5 | 743 | 18.3 | 749 |
| 481.wrf | **95.0** | **118** | 95.5 | 117 | 94.6 | 118 | **95.0** | **118** | 95.5 | 117 | 94.6 | 118 |
| 482.sphinx3 | 267 | 72.9 | **266** | **73.3** | 264 | 73.7 | **266** | **73.3** | 265 | 73.5 | 267 | 73.1 |

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:
Energy Performance = Performance
Utilization Profile = Unbalanced
QPI snoop mode: Home Snoop
    COD Enable = Disabled, Early Snoop = Disabled
CPU C1E Support = Disabled
```

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"
OMP_NUM_THREADS = "20"

 Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
 memory using RedHat EL 7.0

 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:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

C++ benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -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: `-xCORE-AVX2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-prof-use`(pass 2) `-auto-ilp32 -ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

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## Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.xml


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

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