# SPEC® CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## NEC Corporation

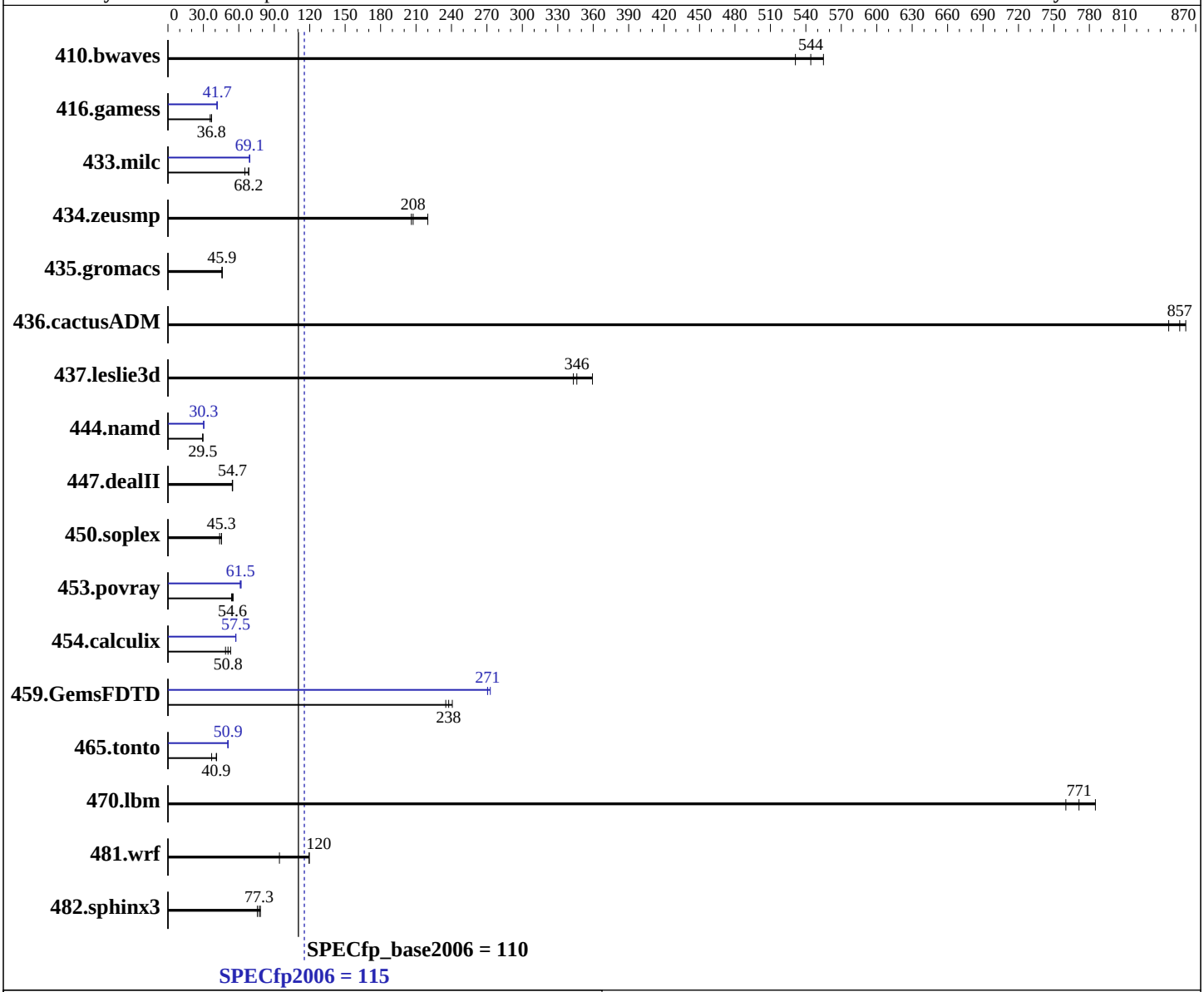
## Express5800/B120f-h (Intel Xeon E5-2690 v3)

SPECfp®2006 = 115

SPECfp_base2006 = 110

**CPU2006 license:** 9006
**Test sponsor:** NEC Corporation
**Tested by:** NEC Corporation

**Test date:** Feb-2015
**Hardware Availability:** Jun-2015
**Software Availability:** Oct-2014




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2690 v3 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.50 GHz |
| CPU MHz: | 2600 |
| FPU: | Integrated |
| CPU(s) enabled: | 24 cores, 2 chips, 12 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 6.6 (Santiago)<br>Kernel 2.6.32-504.el6.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: | ext4 |

Continued on next page

# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## NEC Corporation

## Express5800/B120f-h (Intel Xeon E5-2690 v3)

SPECfp2006 = 115

SPECfp_base2006 = 110

**CPU2006 license:** 9006
**Test sponsor:** NEC Corporation
**Tested by:** NEC Corporation

**Test date:** Feb-2015
**Hardware Availability:** Jun-2015
**Software Availability:** Oct-2014

| | | | |
|---|---|---|---|
| L3 Cache: | 30 MB I+D on chip per chip | System State: | Run level 3 (multi-user) |
| Other Cache: | None | Base Pointers: | 64-bit |
| Memory: | 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R) | Peak Pointers: | 32/64-bit |
| Disk Subsystem: | 1 x 400 GB SATA, SSD | Other Software: | None |
| Other Hardware: | None | | |

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 24.5 | 555 | **25.0** | **544** | 25.6 | 531 | 24.5 | 555 | **25.0** | **544** | 25.6 | 531 |
| 416.gamess | 530 | 36.9 | 548 | 35.7 | **532** | **36.8** | 470 | 41.7 | 472 | 41.5 | **470** | **41.7** |
| 433.milc | **135** | **68.2** | 141 | 65.1 | 134 | 68.4 | 133 | 69.2 | 133 | 69.0 | **133** | **69.1** |
| 434.zeusmp | 41.4 | 220 | 44.2 | 206 | **43.8** | **208** | 41.4 | 220 | 44.2 | 206 | **43.8** | **208** |
| 435.gromacs | 155 | 45.9 | 156 | 45.8 | **156** | **45.9** | 155 | 45.9 | 156 | 45.8 | **156** | **45.9** |
| 436.cactusADM | 14.1 | 847 | 13.9 | 862 | **14.0** | **857** | 14.1 | 847 | 13.9 | 862 | **14.0** | **857** |
| 437.leslie3d | **27.2** | **346** | 26.2 | 359 | 27.4 | 343 | **27.2** | **346** | 26.2 | 359 | 27.4 | 343 |
| 444.namd | 272 | 29.5 | 272 | 29.5 | **272** | **29.5** | 265 | 30.3 | **265** | **30.3** | 265 | 30.3 |
| 447.dealII | 210 | 54.5 | 209 | 54.7 | **209** | **54.7** | 210 | 54.5 | 209 | 54.7 | **209** | **54.7** |
| 450.soplex | **184** | **45.3** | 191 | 43.7 | 184 | 45.4 | **184** | **45.3** | 191 | 43.7 | 184 | 45.4 |
| 453.povray | 98.8 | 53.9 | 96.4 | 55.2 | **97.4** | **54.6** | **86.5** | **61.5** | 85.8 | 62.0 | 86.9 | 61.2 |
| 454.calculix | 169 | 48.7 | **162** | **50.8** | 156 | 53.1 | 143 | 57.5 | **144** | **57.5** | 144 | 57.4 |
| 459.GemsFDTD | 45.1 | 235 | 44.1 | 241 | **44.6** | **238** | **39.2** | **271** | 39.2 | 271 | 38.9 | 273 |
| 465.tonto | 266 | 37.0 | 239 | 41.2 | **241** | **40.9** | 193 | 51.0 | 194 | 50.6 | **193** | **50.9** |
| 470.lbm | 18.1 | 760 | **17.8** | **771** | 17.5 | 785 | 18.1 | 760 | **17.8** | **771** | 17.5 | 785 |
| 481.wrf | **93.4** | **120** | 118 | 94.4 | 93.4 | 120 | **93.4** | **120** | 118 | 94.4 | 93.4 | 120 |
| 482.sphinx3 | 258 | 75.6 | 249 | 78.3 | **252** | **77.3** | 258 | 75.6 | 249 | 78.3 | **252** | **77.3** |

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 Settings:
 Energy Performance: Performance
 Patrol Scrub: Disabled
 Early Snoop: Disabled
 Hyper-Threading: Disabled
```

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "24"

 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

## 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

Continued on next page

## Base Optimization Flags (Continued)

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: `basepeak = yes`

C++ benchmarks:

Continued on next page

# Peak Optimization Flags (Continued)

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/NEC-Platform-Settings-V1.2-B120f-RevB.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/NEC-Platform-Settings-V1.2-B120f-RevB.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 Tue Jun 30 16:15:56 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 June 2015.