# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

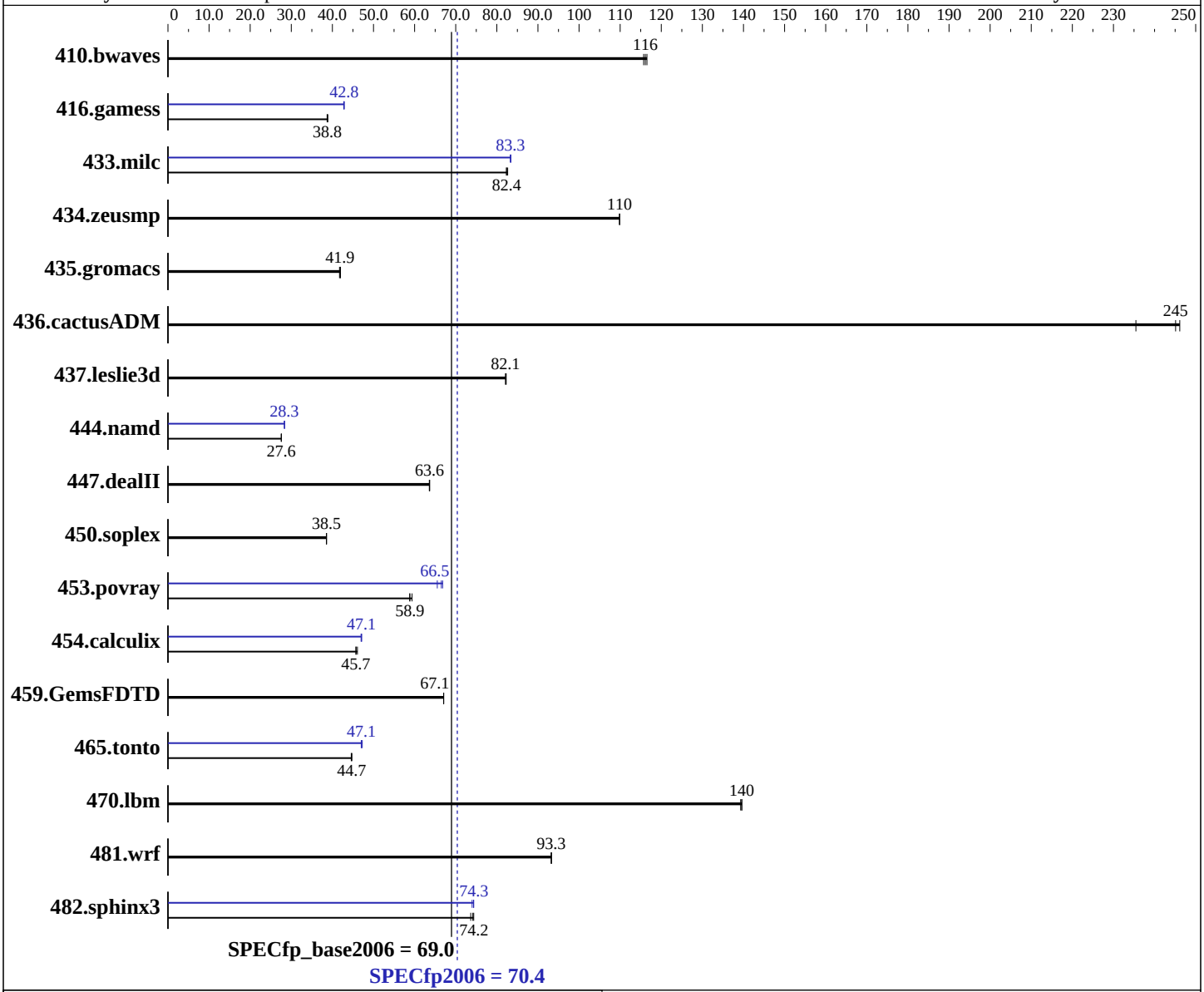
Express5800/R110f-1E (Intel Xeon E3-1220 v3)

SPECfp®2006 = 70.4

SPECfp_base2006 = 69.0

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

**Test date:** Jul-2013
**Hardware Availability:** Jul-2013
**Software Availability:** Mar-2013




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E3-1220 v3 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.50 GHz |
| CPU MHz: | 3100 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip |
| CPU(s) orderable: | 1 chip |
| 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 6.4 (Santiago)<br>Kernel 2.6.32-358.el6.x86_64 |
| Compiler: | C/C++: Version 13.1.1.163 of Intel C++ Studio XE for Linux;<br>Fortran: Version 13.1.1.163 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

## NEC Corporation

Express5800/R110f-1E (Intel Xeon E3-1220 v3)

SPECfp2006 = 70.4

SPECfp_base2006 = 69.0

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

**Test date:** Jul-2013
**Hardware Availability:** Jul-2013
**Software Availability:** Mar-2013

L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC)
Disk Subsystem: 1 x 250 GB SATA, 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 | 117 | 116 | 117 | 117 | **117** | **116** | 117 | 116 | 117 | 117 | **117** | **116** |
| 416.gamess | 503 | 38.9 | **505** | **38.8** | 506 | 38.7 | **457** | **42.8** | 458 | 42.8 | 457 | 42.9 |
| 433.milc | 111 | 82.3 | **111** | **82.4** | 111 | 82.6 | 110 | 83.3 | 110 | 83.4 | **110** | **83.3** |
| 434.zeusmp | 82.8 | 110 | 82.8 | 110 | **82.8** | **110** | 82.8 | 110 | 82.8 | 110 | **82.8** | **110** |
| 435.gromacs | 170 | 42.0 | **171** | **41.9** | 171 | 41.7 | 170 | 42.0 | **171** | **41.9** | 171 | 41.7 |
| 436.cactusADM | **48.8** | **245** | 48.6 | 246 | 50.8 | 235 | **48.8** | **245** | 48.6 | 246 | 50.8 | 235 |
| 437.leslie3d | 114 | 82.3 | 114 | 82.1 | **114** | **82.1** | 114 | 82.3 | 114 | 82.1 | **114** | **82.1** |
| 444.namd | 291 | 27.6 | 291 | 27.6 | **291** | **27.6** | 283 | 28.3 | **283** | **28.3** | 283 | 28.4 |
| 447.dealII | 180 | 63.6 | **180** | **63.6** | 180 | 63.7 | 180 | 63.6 | **180** | **63.6** | 180 | 63.7 |
| 450.soplex | 216 | 38.6 | **216** | **38.5** | 216 | 38.5 | 216 | 38.6 | **216** | **38.5** | 216 | 38.5 |
| 453.povray | 89.6 | 59.4 | 90.5 | 58.8 | **90.4** | **58.9** | 81.2 | 65.5 | 79.6 | 66.8 | **80.0** | **66.5** |
| 454.calculix | **180** | **45.7** | 179 | 46.1 | 180 | 45.7 | 175 | 47.1 | **175** | **47.1** | 176 | 47.0 |
| 459.GemsFDTD | 158 | 67.1 | **158** | **67.1** | 158 | 67.1 | 158 | 67.1 | **158** | **67.1** | 158 | 67.1 |
| 465.tonto | 221 | 44.6 | **220** | **44.7** | 220 | 44.7 | **209** | **47.1** | 209 | 47.0 | 208 | 47.3 |
| 470.lbm | 98.6 | 139 | 98.4 | 140 | **98.4** | **140** | 98.6 | 139 | 98.4 | 140 | **98.4** | **140** |
| 481.wrf | **120** | **93.3** | 120 | 93.3 | 120 | 93.3 | **120** | **93.3** | 120 | 93.3 | 120 | 93.3 |
| 482.sphinx3 | 262 | 74.4 | **263** | **74.2** | 265 | 73.7 | 263 | 74.0 | **262** | **74.3** | 262 | 74.4 |

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 Settings:
 Energy Performance: Performance
```

## General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "4"
```

Continued on next page

## General Notes (Continued)

```
Added glibc-static-2.12-1.107.el6.x86_64.rpm
to enable static linking

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 -static -parallel -opt-prefetch
-ansi-alias
```

Continued on next page

## Base Optimization Flags (Continued)

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

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

Benchmarks using both Fortran and C:
`-xCORE-AVX2 -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: `-xCORE-AVX2`(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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

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- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

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-ic13-official-linux64.20130702.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130702.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.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 16:20:30 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 13 August 2013.