# SPEC® CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## NEC Corporation

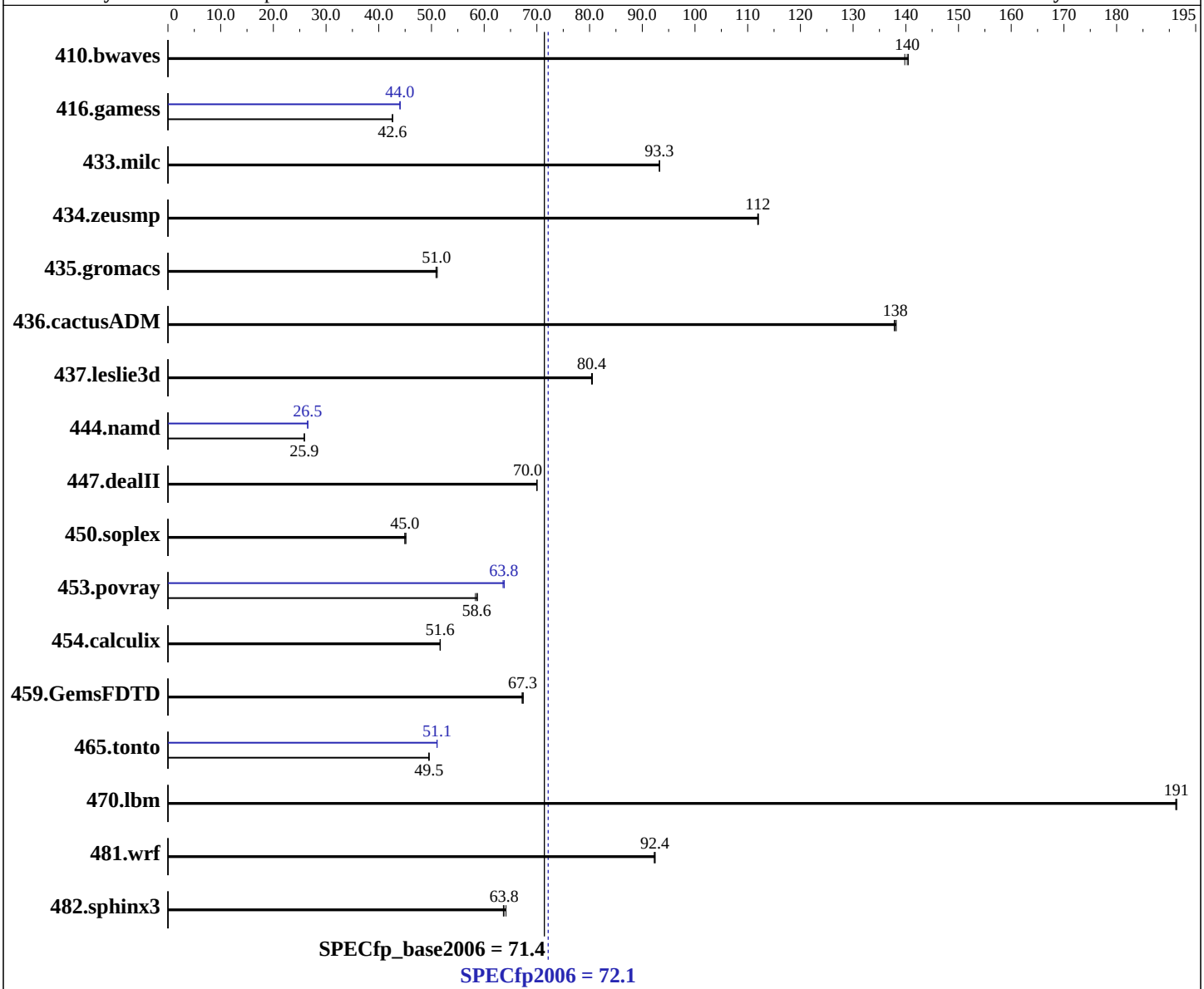
## Express5800/T110h-S (Intel Pentium G4400)

**SPECfp®2006 = 72.1**

**SPECfp_base2006 = 71.4**

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

**Test date:** Dec-2015
**Hardware Availability:** Mar-2016
**Software Availability:** Nov-2015




### Hardware

| | |
|---|---|
| CPU Name: | Intel Pentium G4400 |
| CPU Characteristics: | |
| CPU MHz: | 3300 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 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 7.2 (Maipo)<br>Kernel 3.10.0-327.el7.x86_64 |
| Compiler: | C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;<br>Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux |
| Auto Parallel: | Yes |
| File System: | ext4 |

Continued on next page

# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## NEC Corporation

## Express5800/T110h-S (Intel Pentium G4400)

SPECfp2006 = 72.1

SPECfp_base2006 = 71.4

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

**Test date:** Dec-2015
**Hardware Availability:** Mar-2016
**Software Availability:** Nov-2015

| | |
|---|---|
| L3 Cache: | 3 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 16 GB (2 x 8 GB 2Rx8 PC4-2133P-E) |
| Disk Subsystem: | 1 x 500 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 | 97.2 | 140 | **96.9** | **140** | 96.7 | 140 | 97.2 | 140 | **96.9** | **140** | 96.7 | 140 |
| 416.gamess | 459 | 42.6 | 460 | 42.6 | **459** | **42.6** | **445** | **44.0** | 445 | 44.0 | 444 | 44.1 |
| 433.milc | 98.4 | 93.2 | 98.4 | 93.3 | **98.4** | **93.3** | 98.4 | 93.2 | 98.4 | 93.3 | **98.4** | **93.3** |
| 434.zeusmp | 81.3 | 112 | 81.2 | 112 | **81.3** | **112** | 81.3 | 112 | 81.2 | 112 | **81.3** | **112** |
| 435.gromacs | 140 | 51.1 | **140** | **51.0** | 140 | 50.9 | 140 | 51.1 | **140** | **51.0** | 140 | 50.9 |
| 436.cactusADM | 86.7 | 138 | 86.5 | 138 | **86.6** | **138** | 86.7 | 138 | 86.5 | 138 | **86.6** | **138** |
| 437.leslie3d | 117 | 80.5 | 117 | 80.4 | **117** | **80.4** | 117 | 80.5 | 117 | 80.4 | **117** | **80.4** |
| 444.namd | **310** | **25.9** | 310 | 25.9 | 310 | 25.9 | 302 | 26.5 | **302** | **26.5** | 303 | 26.5 |
| 447.dealII | 163 | 70.0 | 163 | 70.0 | **163** | **70.0** | 163 | 70.0 | 163 | 70.0 | **163** | **70.0** |
| 450.soplex | 186 | 45.0 | **185** | **45.0** | 185 | 45.2 | 186 | 45.0 | **185** | **45.0** | 185 | 45.2 |
| 453.povray | **90.8** | **58.6** | 90.6 | 58.7 | 91.2 | 58.3 | **83.4** | **63.8** | 83.4 | 63.8 | 83.7 | 63.6 |
| 454.calculix | 160 | 51.7 | 160 | 51.6 | **160** | **51.6** | 160 | 51.7 | 160 | 51.6 | **160** | **51.6** |
| 459.GemsFDTD | **158** | **67.3** | 158 | 67.2 | 157 | 67.4 | **158** | **67.3** | 158 | 67.2 | 157 | 67.4 |
| 465.tonto | 199 | 49.5 | 198 | 49.6 | **199** | **49.5** | 193 | 51.1 | 193 | 51.0 | **193** | **51.1** |
| 470.lbm | **71.8** | **191** | 71.9 | 191 | 71.8 | 191 | **71.8** | **191** | 71.9 | 191 | 71.8 | 191 |
| 481.wrf | 121 | 92.4 | 121 | 92.3 | **121** | **92.4** | 121 | 92.4 | 121 | 92.3 | **121** | **92.4** |
| 482.sphinx3 | 306 | 63.6 | 304 | 64.1 | **306** | **63.8** | 306 | 63.6 | 304 | 64.1 | **306** | **63.8** |

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:
 Power Management Policy: Custom
 Energy Performance: Performance
```

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
```

Continued on next page

## General Notes (Continued)

```
OMP_NUM_THREADS = "2"

 Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
 memory using RedHat EL 7.1
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/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:
```
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias
```

Continued on next page

## Base Optimization Flags (Continued)

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xSSE4.2 -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: `basepeak = yes`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `-xSSE4.2`(pass 2) `-prof-gen:threadsafe`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-par-num-threads=1`(pass 1) `-prof-use`(pass 2) `-fno-alias -auto-ilp32`

Continued on next page

# Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -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: basepeak = yes

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-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110h-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110h-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 Tue Feb 9 17:22:15 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 February 2016.