



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## NEC Corporation

### SPECfp<sup>®</sup>\_rate2006 = 170

### Express5800/R110h-1 (Intel Xeon E3-1240L v5)

### SPECfp\_rate\_base2006 = 166

CPU2006 license: 9006

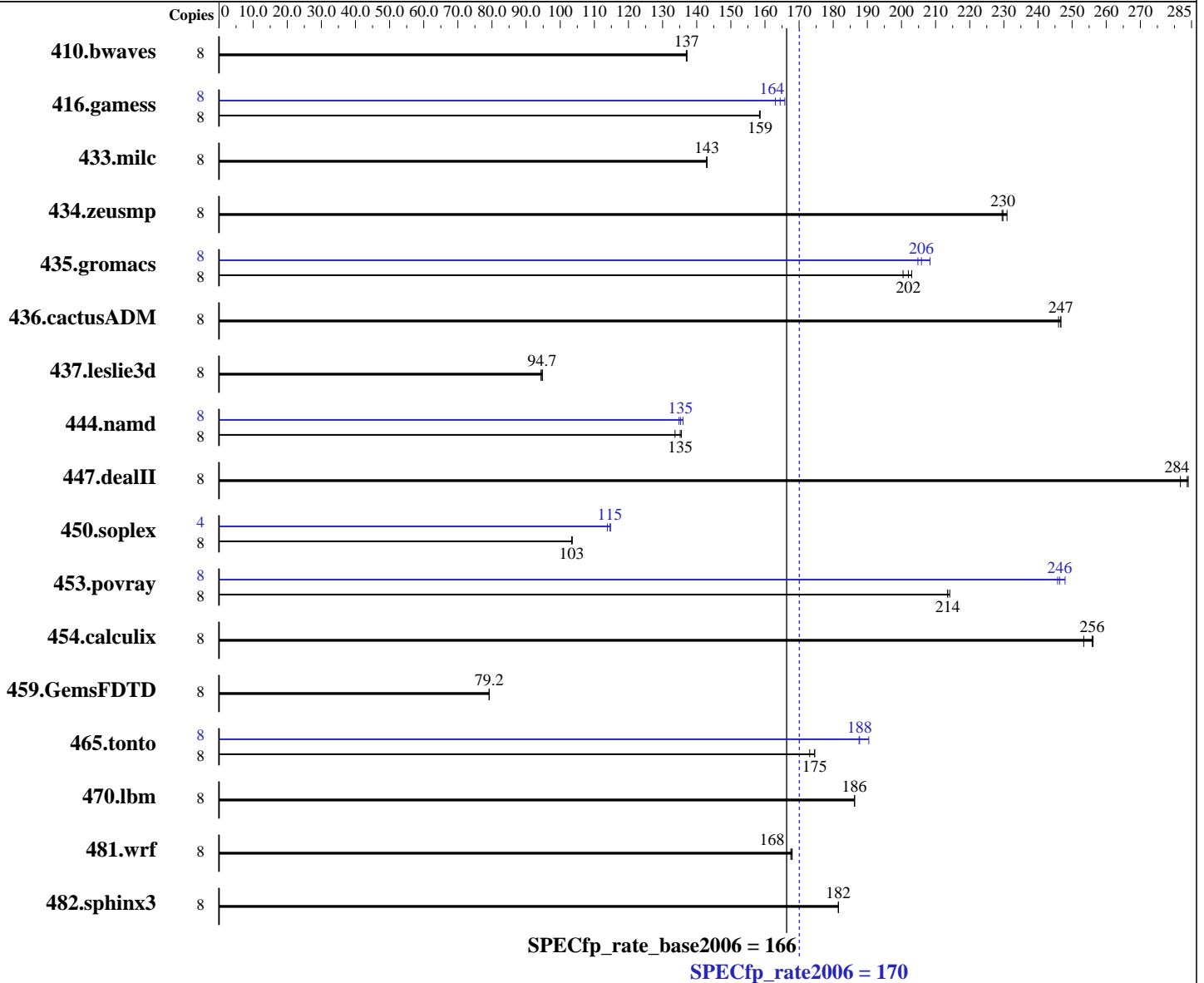
Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015



#### Hardware

CPU Name: Intel Xeon E3-1240L v5  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 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)  
 Kernel 3.10.0-327.el7.x86\_64  
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;  
 Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## NEC Corporation

SPECfp\_rate2006 = 170

Express5800/R110h-1 (Intel Xeon E3-1240L v5)

SPECfp\_rate\_base2006 = 166

CPU2006 license: 9006

Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015

L3 Cache: 8 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: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	793	137	794	137	<b>793</b>	<b>137</b>	8	793	137	794	137	<b>793</b>	<b>137</b>
416.gamess	8	989	158	<b>988</b>	<b>159</b>	988	159	8	<b>952</b>	<b>164</b>	961	163	945	166
433.milc	8	<b>514</b>	<b>143</b>	513	143	514	143	8	<b>514</b>	<b>143</b>	513	143	514	143
434.zeusmp	8	317	229	315	231	<b>317</b>	<b>230</b>	8	317	229	315	231	<b>317</b>	<b>230</b>
435.gromacs	8	<b>283</b>	<b>202</b>	281	203	285	200	8	274	208	279	205	<b>277</b>	<b>206</b>
436.cactusADM	8	387	247	<b>388</b>	<b>247</b>	389	246	8	387	247	<b>388</b>	<b>247</b>	389	246
437.leslie3d	8	797	94.4	793	94.8	<b>794</b>	<b>94.7</b>	8	797	94.4	793	94.8	<b>794</b>	<b>94.7</b>
444.namd	8	480	134	473	136	<b>475</b>	<b>135</b>	8	472	136	<b>474</b>	<b>135</b>	476	135
447.dealII	8	322	284	325	282	<b>323</b>	<b>284</b>	8	322	284	325	282	<b>323</b>	<b>284</b>
450.soplex	8	644	104	<b>645</b>	<b>103</b>	646	103	4	291	115	<b>291</b>	<b>115</b>	293	114
453.povray	8	199	214	199	213	<b>199</b>	<b>214</b>	8	<b>173</b>	<b>246</b>	172	248	173	246
454.calculix	8	258	256	260	253	<b>258</b>	<b>256</b>	8	258	256	260	253	<b>258</b>	<b>256</b>
459.GemsFDTD	8	1071	79.2	<b>1072</b>	<b>79.2</b>	1072	79.2	8	1071	79.2	<b>1072</b>	<b>79.2</b>	1072	79.2
465.tonto	8	<b>451</b>	<b>175</b>	455	173	451	175	8	420	188	413	190	<b>419</b>	<b>188</b>
470.lbm	8	<b>590</b>	<b>186</b>	590	186	590	186	8	<b>590</b>	<b>186</b>	590	186	590	186
481.wrf	8	533	168	532	168	<b>533</b>	<b>168</b>	8	533	168	532	168	<b>533</b>	<b>168</b>
482.sphinx3	8	859	182	859	181	<b>859</b>	<b>182</b>	8	859	182	859	181	<b>859</b>	<b>182</b>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS Settings:  
Power Management Policy: Custom  
Energy Performance: Performance



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 170

Express5800/R110h-1 (Intel Xeon E3-1240L v5)

SPECfp\_rate\_base2006 = 166

CPU2006 license: 9006

Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015

## 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"

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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32

-ansi-alias -opt-mem-layout-trans=3

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 170

Express5800/R110h-1 (Intel Xeon E3-1240L v5)

SPECfp\_rate\_base2006 = 166

CPU2006 license: 9006

Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015

## Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak 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: -D\_FILE\_OFFSET\_BITS=64  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
459.GemsFDTD: -DSPEC\_CPU\_LP64  
465.tonto: -DSPEC\_CPU\_LP64

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 170

Express5800/R110h-1 (Intel Xeon E3-1240L v5)

SPECfp\_rate\_base2006 = 166

CPU2006 license: 9006

Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015

## Peak Portability Flags (Continued)

470.lbm: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX  
482.sphinx3: -DSPEC\_CPU\_LP64

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 170

Express5800/R110h-1 (Intel Xeon E3-1240L v5)

SPECfp\_rate\_base2006 = 166

CPU2006 license: 9006

Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015

## Peak Optimization Flags (Continued)

```
465.tonto: -xCORE-AVX2(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 -auto
           -inline-calloc -opt-malloc-options=3
```

Benchmarks using both Fortran and C:

```
435.gromacs: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
            -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
            -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
            -prof-use(pass 2) -opt-prefetch -auto-ilp32
```

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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.

Report generated on Tue Feb 9 17:21:15 2016 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 9 February 2016.