



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp[®]_rate2006 = 180

Express5800/T110h-S (Intel Xeon E3-1220 v5)

SPECfp_rate_base2006 = 176

CPU2006 license: 9006

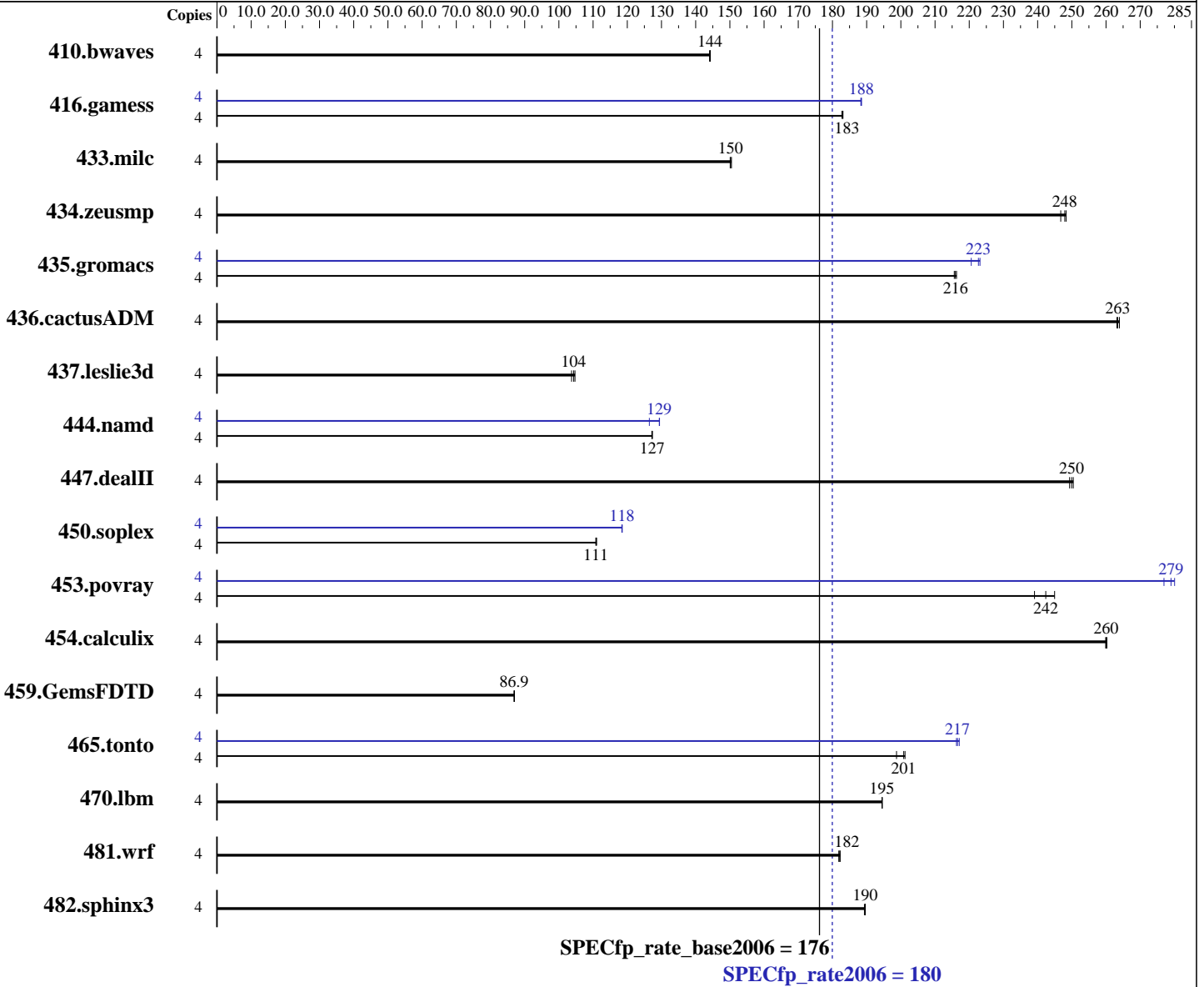
Test date: Dec-2015

Test sponsor: NEC Corporation

Hardware Availability: Mar-2016

Tested by: NEC Corporation

Software Availability: Nov-2015



Hardware

CPU Name: Intel Xeon E3-1220 v5
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 3000
 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 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 = 180

Express5800/T110h-S (Intel Xeon E3-1220 v5)

SPECfp_rate_base2006 = 176

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	4	377	144	377	144	377	144	4	377	144	377	144	377	144
416.gamess	4	428	183	429	183	428	183	4	416	188	416	188	416	188
433.milc	4	245	150	244	150	244	150	4	245	150	244	150	244	150
434.zeusmp	4	148	247	147	248	147	248	4	148	247	147	248	147	248
435.gromacs	4	132	216	132	216	132	216	4	129	221	128	223	128	223
436.cactusADM	4	181	263	182	263	181	264	4	181	263	182	263	181	264
437.leslie3d	4	360	104	359	105	363	104	4	360	104	359	105	363	104
444.namd	4	252	127	252	127	252	127	4	254	126	248	129	248	129
447.dealII	4	183	250	184	249	183	250	4	183	250	184	249	183	250
450.soplex	4	301	111	300	111	301	111	4	281	119	282	118	282	118
453.povray	4	86.9	245	87.8	242	89.0	239	4	76.8	277	76.0	280	76.3	279
454.calculix	4	127	260	127	260	127	260	4	127	260	127	260	127	260
459.GemsFDTD	4	488	86.9	488	86.9	488	87.0	4	488	86.9	488	86.9	488	87.0
465.tonto	4	196	201	196	201	198	199	4	181	217	182	216	182	217
470.lbm	4	283	195	283	195	283	195	4	283	195	283	195	283	195
481.wrf	4	246	182	245	182	245	182	4	246	182	245	182	245	182
482.sphinx3	4	412	189	411	190	411	190	4	412	189	411	190	411	190

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 = 180

Express5800/T110h-S (Intel Xeon E3-1220 v5)

SPECfp_rate_base2006 = 176

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 = 180

Express5800/T110h-S (Intel Xeon E3-1220 v5)

SPECfp_rate_base2006 = 176

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.lelie3d: -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 = 180

Express5800/T110h-S (Intel Xeon E3-1220 v5)

SPECfp_rate_base2006 = 176

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 = 180

Express5800/T110h-S (Intel Xeon E3-1220 v5)

SPECfp_rate_base2006 = 176

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.

Tested with SPEC CPU2006 v1.2.

Report generated on Tue Feb 9 17:22:02 2016 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 9 February 2016.