



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## NEC Corporation

SPECfp<sup>®</sup>\_rate2006 = 440

Express5800/R120f-2M (Intel Xeon E5-2637 v3)

SPECfp\_rate\_base2006 = 426

CPU2006 license: 9006

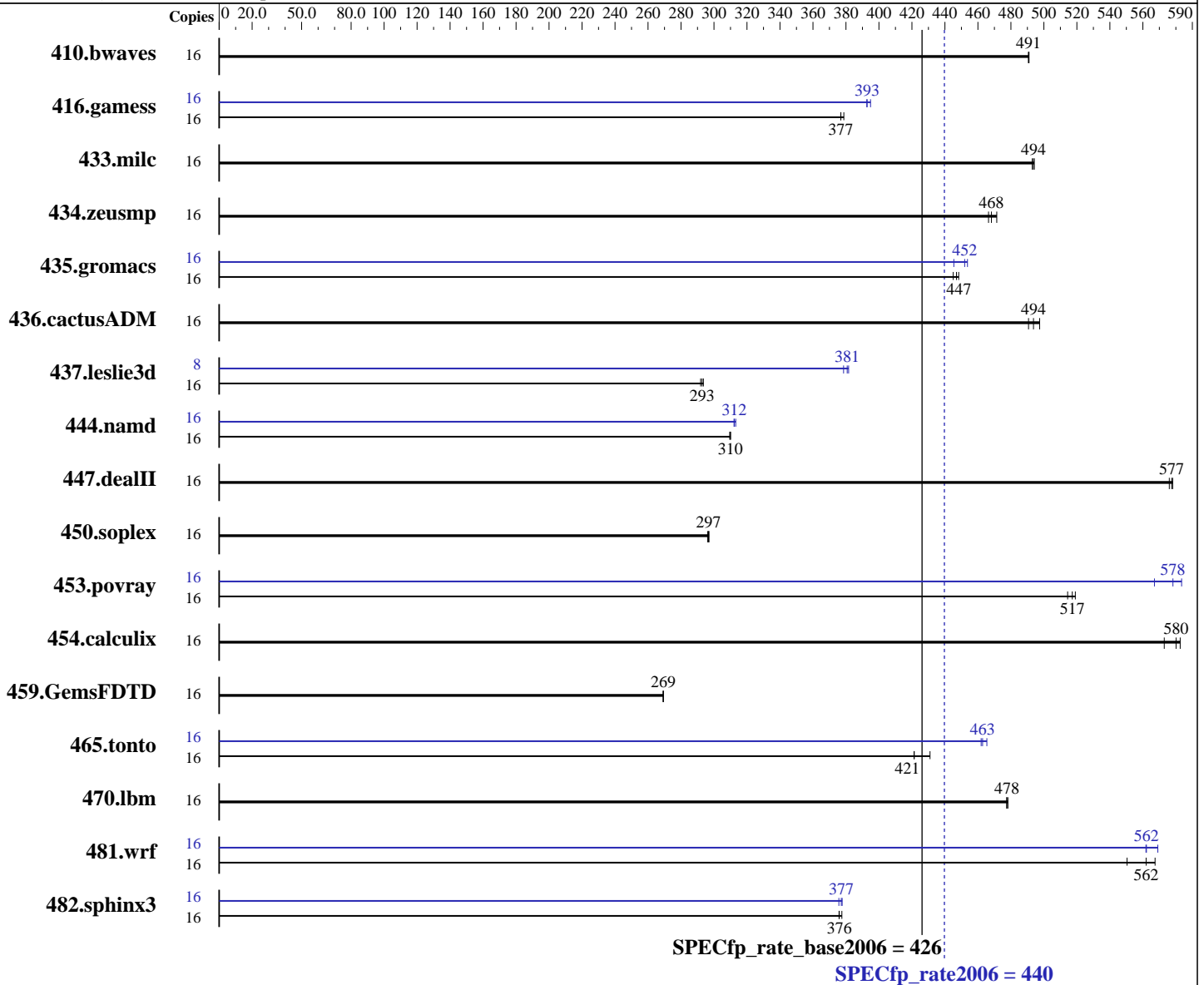
Test date: Nov-2014

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: Jul-2014



### Hardware

CPU Name: Intel Xeon E5-2637 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3500  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
 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 6.5 (Santiago)  
 Kernel 2.6.32-431.17.1.el6.x86\_64  
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;  
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## NEC Corporation

SPECfp\_rate2006 = 440

Express5800/R120f-2M (Intel Xeon E5-2637 v3)

SPECfp\_rate\_base2006 = 426

CPU2006 license: 9006

Test date: Nov-2014

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: Jul-2014

L3 Cache: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 1 x 250 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	16	443	491	<b>443</b>	<b>491</b>	443	491	16	443	491	<b>443</b>	<b>491</b>	443	491
416.gamess	16	827	379	<b>831</b>	<b>377</b>	831	377	16	<b>798</b>	<b>393</b>	793	395	798	393
433.milc	16	298	493	297	494	<b>298</b>	<b>494</b>	16	298	493	297	494	<b>298</b>	<b>494</b>
434.zeusmp	16	<b>311</b>	<b>468</b>	312	466	309	471	16	<b>311</b>	<b>468</b>	312	466	309	471
435.gromacs	16	257	445	<b>256</b>	<b>447</b>	255	448	16	252	454	256	445	<b>253</b>	<b>452</b>
436.cactusADM	16	<b>387</b>	<b>494</b>	390	491	384	497	16	<b>387</b>	<b>494</b>	390	491	384	497
437.leslie3d	16	512	294	<b>514</b>	<b>293</b>	515	292	8	<b>198</b>	<b>381</b>	197	382	199	379
444.namd	16	415	310	414	310	<b>414</b>	<b>310</b>	16	410	313	411	312	<b>411</b>	<b>312</b>
447.dealII	16	318	576	<b>317</b>	<b>577</b>	317	578	16	318	576	<b>317</b>	<b>577</b>	317	578
450.soplex	16	451	296	449	297	<b>450</b>	<b>297</b>	16	451	296	449	297	<b>450</b>	<b>297</b>
453.povray	16	164	519	<b>165</b>	<b>517</b>	165	514	16	150	567	<b>147</b>	<b>578</b>	146	583
454.calculix	16	<b>228</b>	<b>580</b>	227	583	230	573	16	<b>228</b>	<b>580</b>	227	583	230	573
459.GemsFDTD	16	630	269	<b>630</b>	<b>269</b>	631	269	16	630	269	<b>630</b>	<b>269</b>	631	269
465.tonto	16	365	431	<b>374</b>	<b>421</b>	374	421	16	341	462	<b>340</b>	<b>463</b>	338	465
470.lbm	16	<b>460</b>	<b>478</b>	460	478	460	477	16	<b>460</b>	<b>478</b>	460	478	460	477
481.wrf	16	325	550	<b>318</b>	<b>562</b>	315	567	16	<b>318</b>	<b>562</b>	314	569	318	562
482.sphinx3	16	<b>829</b>	<b>376</b>	830	376	826	378	16	830	376	826	378	<b>827</b>	<b>377</b>

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl 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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 440

Express5800/R120f-2M (Intel Xeon E5-2637 v3)

SPECfp\_rate\_base2006 = 426

CPU2006 license: 9006

Test date: Nov-2014

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: Jul-2014

## Platform Notes (Continued)

Patrol Scrub: Disabled

## 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"

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

Filesystem page cache cleared with:

echo 1 > /proc/sys/vm/drop\_caches

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

## 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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 440

Express5800/R120f-2M (Intel Xeon E5-2637 v3)

SPECfp\_rate\_base2006 = 426

CPU2006 license: 9006

Test date: Nov-2014

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: Jul-2014

## Base Portability Flags (Continued)

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

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 (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks:

icpc -m64

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 440

Express5800/R120f-2M (Intel Xeon E5-2637 v3)

SPECfp\_rate\_base2006 = 426

CPU2006 license: 9006

Test date: Nov-2014

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: Jul-2014

## Peak Portability Flags (Continued)

```

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

```

## Peak Optimization Flags

### C benchmarks:

```

433.milc: basepeak = yes
470.lbm: basepeak = yes
482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
             -unroll2

```

### C++ benchmarks:

```

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
          -O3(pass 2) -no-prec-div(pass 2)
          -opt-mem-layout-trans=3(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)
          -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(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

```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**NEC Corporation**

**SPECfp\_rate2006 = 440**

Express5800/R120f-2M (Intel Xeon E5-2637 v3)

**SPECfp\_rate\_base2006 = 426**

**CPU2006 license:** 9006

**Test date:** Nov-2014

**Test sponsor:** NEC Corporation

**Hardware Availability:** Feb-2015

**Tested by:** NEC Corporation

**Software Availability:** Jul-2014

## Peak Optimization Flags (Continued)

437.leslie3d: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

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) -unroll4  
-auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2)  
-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: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>  
<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>  
<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue Mar 10 16:02:40 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 10 March 2015.