



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## NEC Corporation

SPECfp<sup>®</sup>\_rate2006 = 857

Express5800/R120f-1M (Intel Xeon E5-2697 v3)

SPECfp\_rate\_base2006 = 833

CPU2006 license: 9006

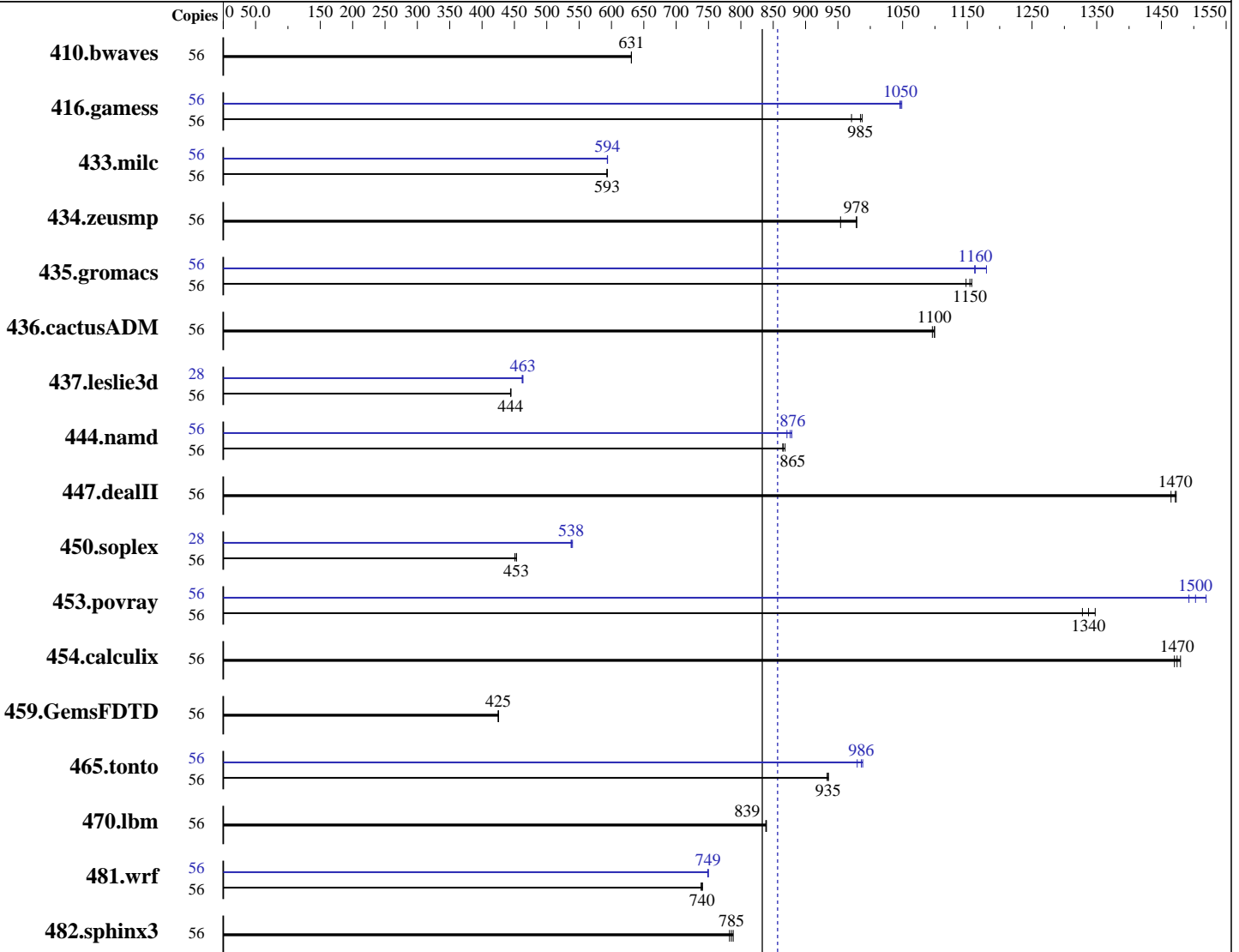
Test date: Nov-2014

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: Jul-2014



SPECfp\_rate\_base2006 = 833

SPECfp\_rate2006 = 857

### Hardware

CPU Name: Intel Xeon E5-2697 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 28 cores, 2 chips, 14 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 = **857**

Express5800/R120f-1M (Intel Xeon E5-2697 v3)

SPECfp\_rate\_base2006 = **833**

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: 35 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	56	<b>1206</b>	<b>631</b>	1207	631	1206	631	56	<b>1206</b>	<b>631</b>	1207	631	1206	631
416.gamess	56	1110	987	<b>1113</b>	<b>985</b>	1129	971	56	1048	1050	1046	1050	<b>1048</b>	<b>1050</b>
433.milc	56	867	593	866	593	<b>866</b>	<b>593</b>	56	<b>866</b>	<b>594</b>	866	594	865	594
434.zeusmp	56	534	954	520	979	<b>521</b>	<b>978</b>	56	534	954	520	979	<b>521</b>	<b>978</b>
435.gromacs	56	346	1160	<b>346</b>	<b>1150</b>	348	1150	56	339	1180	344	1160	<b>344</b>	<b>1160</b>
436.cactusADM	56	<b>609</b>	<b>1100</b>	609	1100	611	1100	56	<b>609</b>	<b>1100</b>	609	1100	611	1100
437.leslie3d	56	1186	444	1183	445	<b>1185</b>	<b>444</b>	28	<b>569</b>	<b>463</b>	570	462	568	463
444.namd	56	519	865	<b>519</b>	<b>865</b>	517	868	56	<b>513</b>	<b>876</b>	511	879	515	871
447.dealII	56	435	1470	437	1460	<b>435</b>	<b>1470</b>	56	435	1470	437	1460	<b>435</b>	<b>1470</b>
450.soplex	56	<b>1031</b>	<b>453</b>	1031	453	1037	451	28	433	540	<b>434</b>	<b>538</b>	434	538
453.povray	56	224	1330	<b>223</b>	<b>1340</b>	221	1350	56	200	1490	<b>198</b>	<b>1500</b>	196	1520
454.calculix	56	<b>313</b>	<b>1470</b>	314	1470	312	1480	56	<b>313</b>	<b>1470</b>	314	1470	312	1480
459.GemsFDTD	56	1396	426	<b>1398</b>	<b>425</b>	1398	425	56	1396	426	<b>1398</b>	<b>425</b>	1398	425
465.tonto	56	589	935	<b>589</b>	<b>935</b>	590	933	56	<b>559</b>	<b>986</b>	558	988	562	980
470.lbm	56	<b>917</b>	<b>839</b>	917	839	918	839	56	<b>917</b>	<b>839</b>	917	839	918	839
481.wrf	56	<b>845</b>	<b>740</b>	844	741	847	738	56	835	749	834	750	<b>835</b>	<b>749</b>
482.sphinx3	56	<b>1390</b>	<b>785</b>	1385	788	1395	782	56	<b>1390</b>	<b>785</b>	1385	788	1395	782

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 = 857

Express5800/R120f-1M (Intel Xeon E5-2697 v3)

SPECfp\_rate\_base2006 = 833

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  
Cluster on Die: Enabled

## 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"
```

The Express5800/R120f-1M (Intel Xeon E5-2697 v3) and the Express5800/R120f-2M (Intel Xeon E5-2697 v3) models are electronically equivalent. The results have been measured on the Express5800/R120f-2M (Intel Xeon E5-2697 v3) model.

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 3



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 857

Express5800/R120f-1M (Intel Xeon E5-2697 v3)

SPECfp\_rate\_base2006 = 833

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)

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

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

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**NEC Corporation**

**SPECfp\_rate2006 = 857**

**Express5800/R120f-1M (Intel Xeon E5-2697 v3)**

**SPECfp\_rate\_base2006 = 833**

**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)

```

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
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

```

## 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)
         -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
         -auto-ilp32

```

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

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: -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-malloc-options=3

```

```

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

```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 857

Express5800/R120f-1M (Intel Xeon E5-2697 v3)

SPECfp\_rate\_base2006 = 833

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)

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

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 CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 857

Express5800/R120f-1M (Intel Xeon E5-2697 v3)

SPECfp\_rate\_base2006 = 833

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Nov-2014

Hardware Availability: Feb-2015

Software Availability: Jul-2014

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 Thu Feb 5 18:15:16 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 2 December 2014.