



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## NEC Corporation

SPECfp<sup>®</sup>2006 = **105**

Express5800/B120f (Intel Xeon E5-2640 v3)

SPECfp\_base2006 = **99.8**

CPU2006 license: 9006

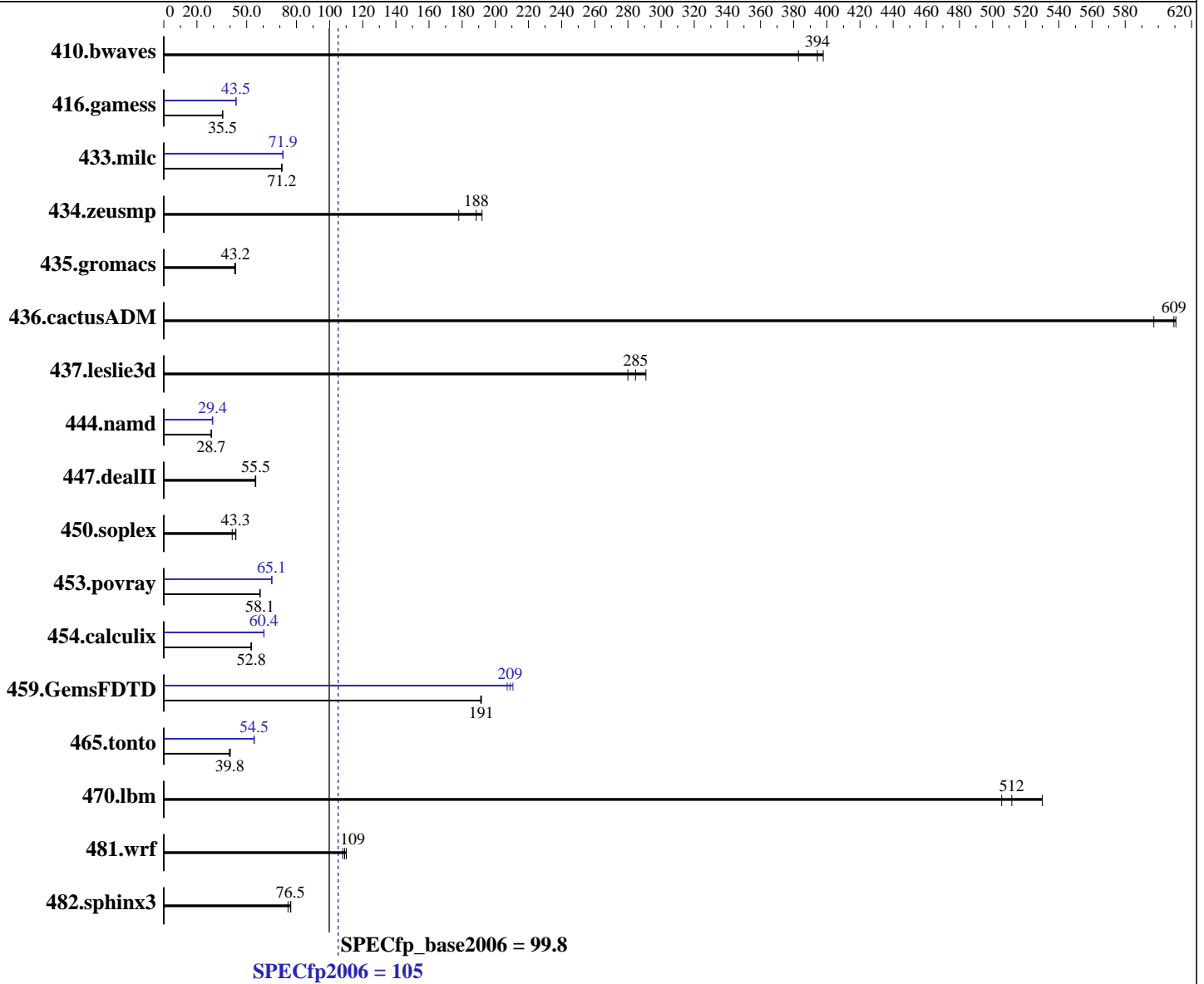
Test date: Dec-2014

Test sponsor: NEC Corporation

Hardware Availability: Apr-2015

Tested by: NEC Corporation

Software Availability: Jul-2014



**Hardware**

CPU Name: Intel Xeon E5-2640 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip  
 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 2.6.32-431.20.3.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: Yes  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## NEC Corporation

SPECfp2006 = **105**

Express5800/B120f (Intel Xeon E5-2640 v3)

SPECfp\_base2006 = **99.8**

CPU2006 license: 9006

Test date: Dec-2014

Test sponsor: NEC Corporation

Hardware Availability: Apr-2015

Tested by: NEC Corporation

Software Availability: Jul-2014

L3 Cache: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 96 GB (6 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)  
 Disk Subsystem: 1 x 300 GB SAS, 10000 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	35.5	383	<b>34.5</b>	<b>394</b>	34.2	398	35.5	383	<b>34.5</b>	<b>394</b>	34.2	398
416.gamess	<b>551</b>	<b>35.5</b>	550	35.6	554	35.4	449	43.6	450	43.5	<b>450</b>	<b>43.5</b>
433.milc	129	71.3	<b>129</b>	<b>71.2</b>	129	71.0	128	71.8	<b>128</b>	<b>71.9</b>	128	71.9
434.zeusmp	47.4	192	51.1	178	<b>48.3</b>	<b>188</b>	47.4	192	51.1	178	<b>48.3</b>	<b>188</b>
435.gromacs	165	43.3	167	42.7	<b>165</b>	<b>43.2</b>	165	43.3	167	42.7	<b>165</b>	<b>43.2</b>
436.cactusADM	20.0	597	19.6	611	<b>19.6</b>	<b>609</b>	20.0	597	19.6	611	<b>19.6</b>	<b>609</b>
437.leslie3d	<b>33.0</b>	<b>285</b>	33.6	280	32.3	291	<b>33.0</b>	<b>285</b>	33.6	280	32.3	291
444.namd	<b>280</b>	<b>28.7</b>	280	28.6	280	28.7	273	29.4	<b>272</b>	<b>29.4</b>	272	29.4
447.dealII	207	55.2	206	55.5	<b>206</b>	<b>55.5</b>	207	55.2	206	55.5	<b>206</b>	<b>55.5</b>
450.soplex	202	41.3	192	43.5	<b>193</b>	<b>43.3</b>	202	41.3	192	43.5	<b>193</b>	<b>43.3</b>
453.povray	91.7	58.0	<b>91.6</b>	<b>58.1</b>	91.6	58.1	81.6	65.2	81.8	65.0	<b>81.7</b>	<b>65.1</b>
454.calculix	<b>156</b>	<b>52.8</b>	156	52.8	157	52.6	<b>137</b>	<b>60.4</b>	137	60.3	136	60.5
459.GemsFDTD	55.5	191	<b>55.4</b>	<b>191</b>	55.4	192	<b>50.8</b>	<b>209</b>	51.2	207	50.4	211
465.tonto	245	40.1	248	39.6	<b>247</b>	<b>39.8</b>	180	54.6	<b>180</b>	<b>54.5</b>	181	54.4
470.lbm	27.2	505	<b>26.9</b>	<b>512</b>	25.9	530	27.2	505	<b>26.9</b>	<b>512</b>	25.9	530
481.wrf	103	108	<b>102</b>	<b>109</b>	101	110	103	108	<b>102</b>	<b>109</b>	101	110
482.sphinx3	<b>255</b>	<b>76.5</b>	254	76.6	260	74.9	<b>255</b>	<b>76.5</b>	254	76.6	260	74.9

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:  
 Processor C6 Report: Enabled  
 Energy Performance: Performance  
 Patrol Scrub: Disabled  
 Early Snoop: Disabled  
 Hyper-Threading: Disabled



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp2006 = 105

Express5800/B120f (Intel Xeon E5-2640 v3)

SPECfp\_base2006 = 99.8

CPU2006 license: 9006

Test date: Dec-2014

Test sponsor: NEC Corporation

Hardware Availability: Apr-2015

Tested by: NEC Corporation

Software Availability: Jul-2014

## General Notes

Environment variables set by runspec before the start of the run:

KMP\_AFFINITY = "granularity=fine,compact"

LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

OMP\_NUM\_THREADS = "16"

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat\_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.lelie3d: -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 -parallel -opt-prefetch  
-ansi-alias

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp2006 = 105

Express5800/B120f (Intel Xeon E5-2640 v3)

SPECfp\_base2006 = 99.8

CPU2006 license: 9006

Test date: Dec-2014

Test sponsor: NEC Corporation

Hardware Availability: Apr-2015

Tested by: NEC Corporation

Software Availability: Jul-2014

## Base Optimization Flags (Continued)

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xCORE-AVX2 -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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp2006 = 105

Express5800/B120f (Intel Xeon E5-2640 v3)

SPECfp\_base2006 = 99.8

CPU2006 license: 9006

Test date: Dec-2014

Test sponsor: NEC Corporation

Hardware Availability: Apr-2015

Tested by: NEC Corporation

Software Availability: Jul-2014

## Peak Optimization Flags (Continued)

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(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) -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

437.leslie3d: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

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

### Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-B120f-RevB.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-B120f-RevB.xml>



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp2006 = 105

Express5800/B120f (Intel Xeon E5-2640 v3)

SPECfp\_base2006 = 99.8

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Dec-2014

Hardware Availability: Apr-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 Tue Jun 2 13:46:17 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 2 June 2015.