



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

SPECfp<sup>®</sup>2006 = **64.1**

### Express5800/GT110f-S (Intel Core i3-4330)

SPECfp\_base2006 = **63.1**

CPU2006 license: 9006

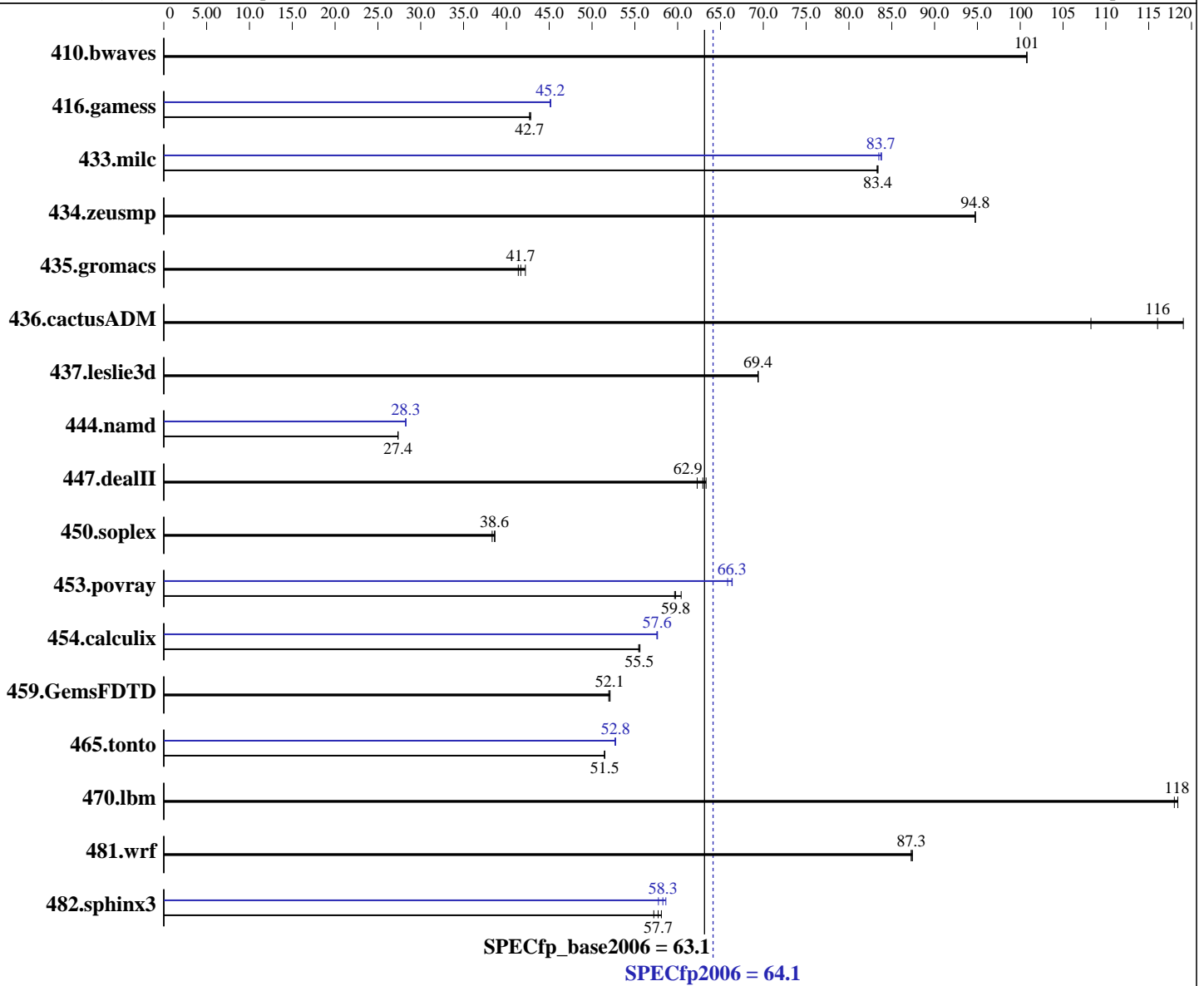
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Oct-2013

Hardware Availability: Oct-2013

Software Availability: Sep-2013



Hardware	
CPU Name:	Intel Core i3-4330
CPU Characteristics:	
CPU MHz:	3500
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 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

Software	
Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago)
	Kernel 2.6.32-358.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
	Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache: 4 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC)  
 Disk Subsystem: 1 x 250 GB SATA, 7200 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	135	101	135	101	<b><u>135</u></b>	<b><u>101</u></b>	135	101	135	101	<b><u>135</u></b>	<b><u>101</u></b>
416.gamess	458	42.7	<b><u>458</u></b>	<b><u>42.7</u></b>	457	42.8	433	45.2	<b><u>434</u></b>	<b><u>45.2</u></b>	434	45.1
433.milc	<b><u>110</u></b>	<b><u>83.4</u></b>	110	83.4	110	83.3	<b><u>110</u></b>	<b><u>83.7</u></b>	110	83.5	110	83.8
434.zeusmp	<b><u>96.0</u></b>	<b><u>94.8</u></b>	96.0	94.8	96.0	94.8	<b><u>96.0</u></b>	<b><u>94.8</u></b>	96.0	94.8	96.0	94.8
435.gromacs	173	41.4	<b><u>171</u></b>	<b><u>41.7</u></b>	169	42.2	173	41.4	<b><u>171</u></b>	<b><u>41.7</u></b>	169	42.2
436.cactusADM	110	108	100	119	<b><u>103</u></b>	<b><u>116</u></b>	110	108	100	119	<b><u>103</u></b>	<b><u>116</u></b>
437.leslie3d	135	69.4	135	69.4	<b><u>135</u></b>	<b><u>69.4</u></b>	135	69.4	135	69.4	<b><u>135</u></b>	<b><u>69.4</u></b>
444.namd	293	27.4	<b><u>293</u></b>	<b><u>27.4</u></b>	293	27.3	<b><u>284</u></b>	<b><u>28.3</u></b>	284	28.2	284	28.3
447.dealII	<b><u>182</u></b>	<b><u>62.9</u></b>	181	63.3	184	62.3	<b><u>182</u></b>	<b><u>62.9</u></b>	181	63.3	184	62.3
450.soplex	218	38.3	<b><u>216</u></b>	<b><u>38.6</u></b>	216	38.7	218	38.3	<b><u>216</u></b>	<b><u>38.6</u></b>	216	38.7
453.povray	89.2	59.6	<b><u>89.0</u></b>	<b><u>59.8</u></b>	88.1	60.4	80.8	65.8	<b><u>80.2</u></b>	<b><u>66.3</u></b>	80.2	66.4
454.calculix	149	55.4	148	55.6	<b><u>149</u></b>	<b><u>55.5</u></b>	143	57.6	143	57.6	<b><u>143</u></b>	<b><u>57.6</u></b>
459.GemsFDTD	204	52.1	<b><u>204</u></b>	<b><u>52.1</u></b>	204	52.0	204	52.1	<b><u>204</u></b>	<b><u>52.1</u></b>	204	52.0
465.tonto	191	51.4	<b><u>191</u></b>	<b><u>51.5</u></b>	191	51.5	187	52.7	187	52.8	<b><u>187</u></b>	<b><u>52.8</u></b>
470.lbm	<b><u>116</u></b>	<b><u>118</u></b>	116	118	116	118	<b><u>116</u></b>	<b><u>118</u></b>	116	118	116	118
481.wrf	<b><u>128</u></b>	<b><u>87.3</u></b>	128	87.4	128	87.3	<b><u>128</u></b>	<b><u>87.3</u></b>	128	87.4	128	87.3
482.sphinx3	<b><u>338</u></b>	<b><u>57.7</u></b>	335	58.1	341	57.2	<b><u>334</u></b>	<b><u>58.3</u></b>	332	58.6	337	57.8

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:  
Energy Performance: Performance

## General Notes

Environment variables set by runspec before the start of the run:  
 KMP\_AFFINITY = "granularity=fine,compact,1,0"  
 LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"  
 OMP\_NUM\_THREADS = "2"

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## General Notes (Continued)

Added glibc-static-2.12-1.107.el6.x86\_64.rpm  
to enable static linking

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.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 -static -parallel -opt-prefetch  
-ansi-alias

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## Base Optimization Flags (Continued)

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -static -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) -static  
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

C++ benchmarks:

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## 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- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

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)  
-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-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.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-R120d-RevA.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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