



# SPEC® CFP2006 Result

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## NEC Corporation

SPECfp®2006 = **65.6**

Express5800/GT110g-S (Intel Core i3-4350)

SPECfp\_base2006 = **64.4**

CPU2006 license: 9006

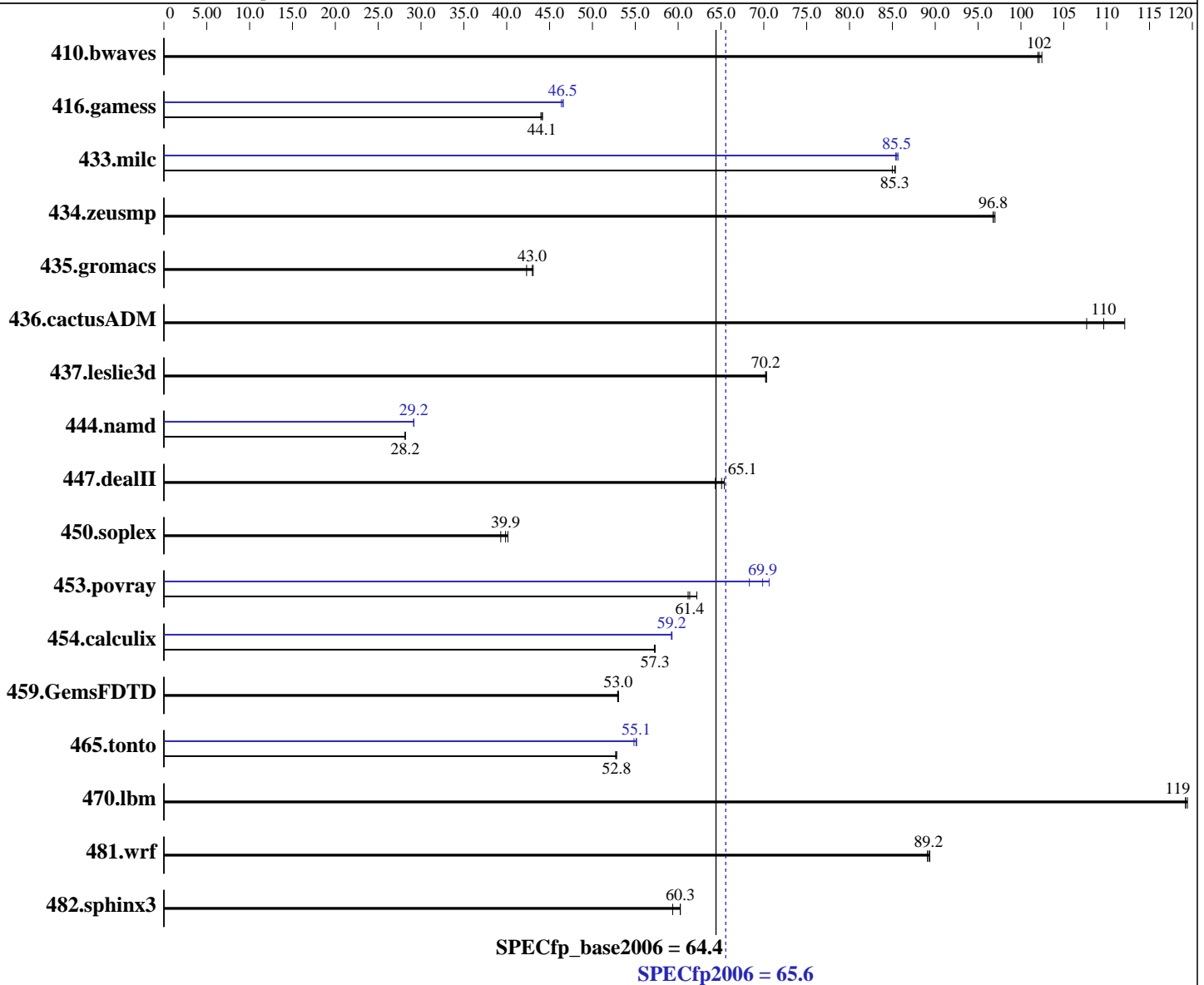
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jun-2014

Hardware Availability: Jul-2014

Software Availability: Jan-2014



### Hardware

CPU Name: Intel Core i3-4350  
 CPU Characteristics:  
 CPU MHz: 3600  
 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

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### Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)  
 Kernel 2.6.32-431.el6.x86\_64  
 Compiler: C/C++: Version 14.0.2.144 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.2.144 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 PC3-12800E-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	<b>133</b>	<b>102</b>	133	102	133	102	<b>133</b>	<b>102</b>	133	102	133	102
416.gamess	445	44.0	<b>444</b>	<b>44.1</b>	443	44.2	420	46.6	422	46.4	<b>421</b>	<b>46.5</b>
433.milc	108	85.0	108	85.3	<b>108</b>	<b>85.3</b>	108	85.4	107	85.7	<b>107</b>	<b>85.5</b>
434.zeusmp	<b>94.0</b>	<b>96.8</b>	93.8	97.0	94.0	96.8	<b>94.0</b>	<b>96.8</b>	93.8	97.0	94.0	96.8
435.gromacs	169	42.3	166	43.1	<b>166</b>	<b>43.0</b>	169	42.3	166	43.1	<b>166</b>	<b>43.0</b>
436.cactusADM	111	108	<b>109</b>	<b>110</b>	107	112	111	108	<b>109</b>	<b>110</b>	107	112
437.leslie3d	134	70.3	<b>134</b>	<b>70.2</b>	134	70.2	134	70.3	<b>134</b>	<b>70.2</b>	134	70.2
444.namd	<b>285</b>	<b>28.2</b>	285	28.2	285	28.2	275	29.2	<b>275</b>	<b>29.2</b>	275	29.2
447.dealII	178	64.3	175	65.4	<b>176</b>	<b>65.1</b>	178	64.3	175	65.4	<b>176</b>	<b>65.1</b>
450.soplex	212	39.3	208	40.1	<b>209</b>	<b>39.9</b>	212	39.3	208	40.1	<b>209</b>	<b>39.9</b>
453.povray	<b>86.7</b>	<b>61.4</b>	85.5	62.2	87.0	61.2	75.3	70.6	77.9	68.3	<b>76.2</b>	<b>69.9</b>
454.calculix	144	57.3	144	57.2	<b>144</b>	<b>57.3</b>	139	59.3	139	59.2	<b>139</b>	<b>59.2</b>
459.GemsFDTD	<b>200</b>	<b>53.0</b>	200	53.0	200	52.9	<b>200</b>	<b>53.0</b>	200	53.0	200	52.9
465.tonto	187	52.7	<b>186</b>	<b>52.8</b>	186	52.8	<b>179</b>	<b>55.1</b>	179	54.9	178	55.2
470.lbm	115	119	115	119	<b>115</b>	<b>119</b>	115	119	115	119	<b>115</b>	<b>119</b>
481.wrf	<b>125</b>	<b>89.2</b>	125	89.1	125	89.4	<b>125</b>	<b>89.2</b>	125	89.1	125	89.4
482.sphinx3	323	60.3	<b>323</b>	<b>60.3</b>	328	59.4	<b>323</b>	<b>60.3</b>	<b>323</b>	<b>60.3</b>	328	59.4

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  
 Processor C6 Report: Disabled  
 Package C State Limit: C0



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## 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"

Added glibc-static-2.12-1.132.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



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## Base Optimization Flags

C benchmarks:

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

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: basepeak = yes

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## Peak Optimization Flags (Continued)

C++ benchmarks:

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.dealIII: 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-R120-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-R120-RevB.xml>



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

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