



SPEC® CFP2006 Result

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NEC Corporation

SPECfp®2006 = **75.2**

Express5800/R110g-1E (Intel Xeon E3-1231 v3)

SPECfp_base2006 = **74.0**

CPU2006 license: 9006

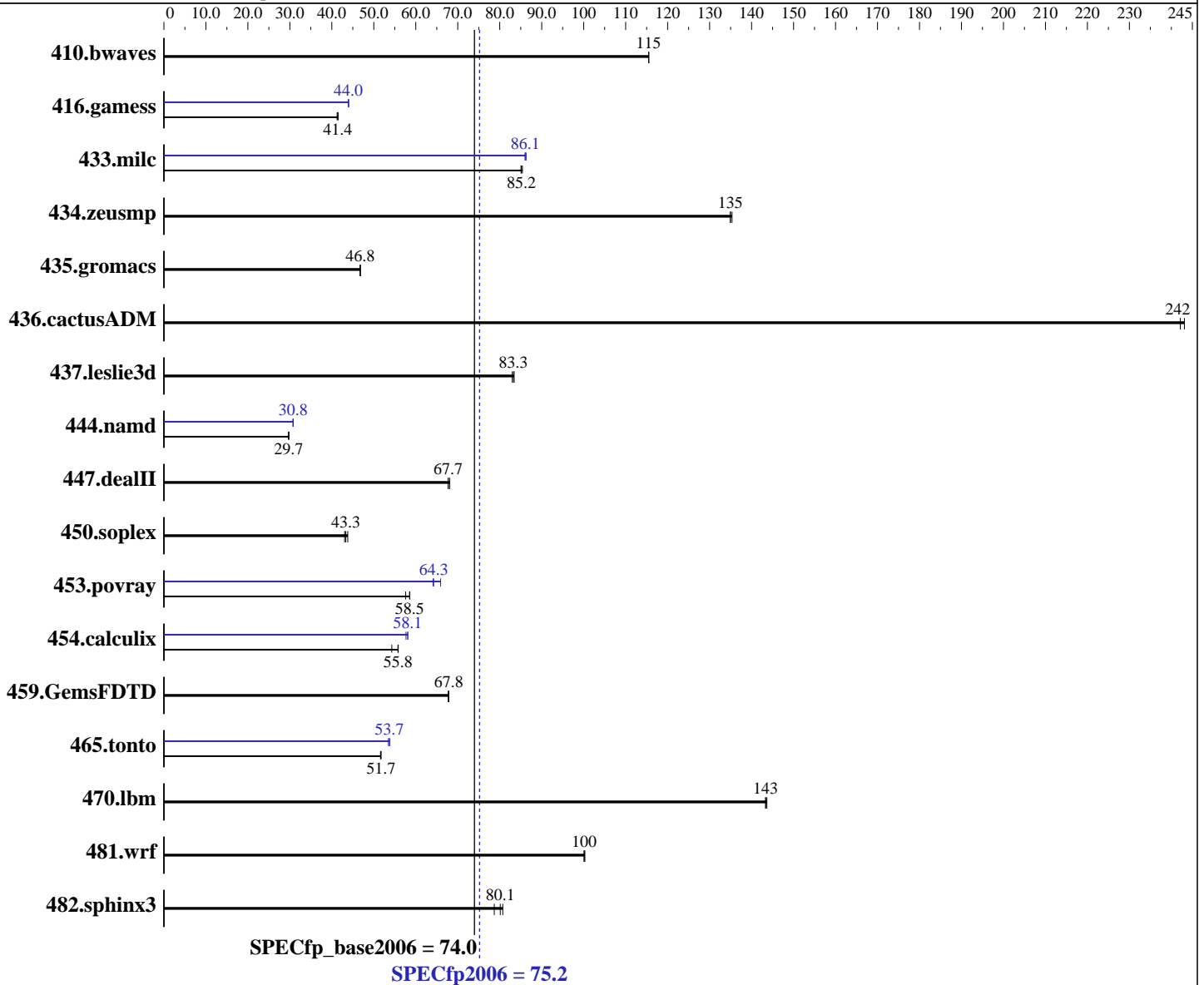
Test date: Jul-2014

Test sponsor: NEC Corporation

Hardware Availability: Jul-2014

Tested by: NEC Corporation

Software Availability: Jan-2014



Hardware

CPU Name: Intel Xeon E3-1231 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
 CPU MHz: 3400
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 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: 8 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	118	115	118	115	<u>118</u>	<u>115</u>	118	115	118	115	<u>118</u>	<u>115</u>
416.gamess	475	41.3	<u>473</u>	<u>41.4</u>	472	41.5	445	44.0	445	44.0	<u>445</u>	<u>44.0</u>
433.milc	<u>108</u>	<u>85.2</u>	108	85.1	107	85.4	107	86.1	106	86.3	<u>107</u>	<u>86.1</u>
434.zeusmp	67.4	135	67.2	135	<u>67.4</u>	<u>135</u>	67.4	135	67.2	135	<u>67.4</u>	<u>135</u>
435.gromacs	153	46.8	<u>153</u>	<u>46.8</u>	153	46.8	153	46.8	<u>153</u>	<u>46.8</u>	153	46.8
436.cactusADM	<u>49.4</u>	<u>242</u>	49.2	243	49.4	242	<u>49.4</u>	<u>242</u>	49.2	243	49.4	242
437.leslie3d	<u>113</u>	<u>83.3</u>	113	83.4	113	83.0	<u>113</u>	<u>83.3</u>	113	83.4	113	83.0
444.namd	270	29.7	270	29.7	<u>270</u>	<u>29.7</u>	261	30.8	261	30.8	<u>261</u>	<u>30.8</u>
447.dealII	<u>169</u>	<u>67.7</u>	169	67.7	168	68.1	<u>169</u>	<u>67.7</u>	169	67.7	168	68.1
450.soplex	190	43.8	194	43.0	<u>192</u>	<u>43.3</u>	190	43.8	194	43.0	<u>192</u>	<u>43.3</u>
453.povray	90.8	58.6	<u>90.9</u>	<u>58.5</u>	92.4	57.6	83.0	64.1	<u>82.8</u>	<u>64.3</u>	80.7	65.9
454.calculix	152	54.3	<u>148</u>	<u>55.8</u>	148	55.8	143	57.7	142	58.1	<u>142</u>	<u>58.1</u>
459.GemsFDTD	156	67.8	<u>156</u>	<u>67.8</u>	157	67.7	156	67.8	<u>156</u>	<u>67.8</u>	157	67.7
465.tonto	191	51.6	<u>190</u>	<u>51.7</u>	190	51.7	<u>183</u>	<u>53.7</u>	183	53.8	184	53.5
470.lbm	95.7	144	95.9	143	<u>95.8</u>	<u>143</u>	95.7	144	95.9	143	<u>95.8</u>	<u>143</u>
481.wrf	112	100	111	100	<u>112</u>	<u>100</u>	112	100	111	100	<u>112</u>	<u>100</u>
482.sphinx3	<u>243</u>	<u>80.1</u>	241	80.7	248	78.7	<u>243</u>	<u>80.1</u>	241	80.7	248	78.7

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 = "4"

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General Notes (Continued)

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.deall: -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: `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) -prof-use(pass 2)
-fno-alias -auto-ilp32`

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Peak Optimization Flags (Continued)

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-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.

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