



# SPEC<sup>®</sup> CFP2006 Result

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## NEC Corporation

SPECfp<sup>®</sup>2006 = **75.4**

Express5800/T110f-S (Intel Xeon E3-1270 v3)

SPECfp\_base2006 = **74.1**

CPU2006 license: 9006

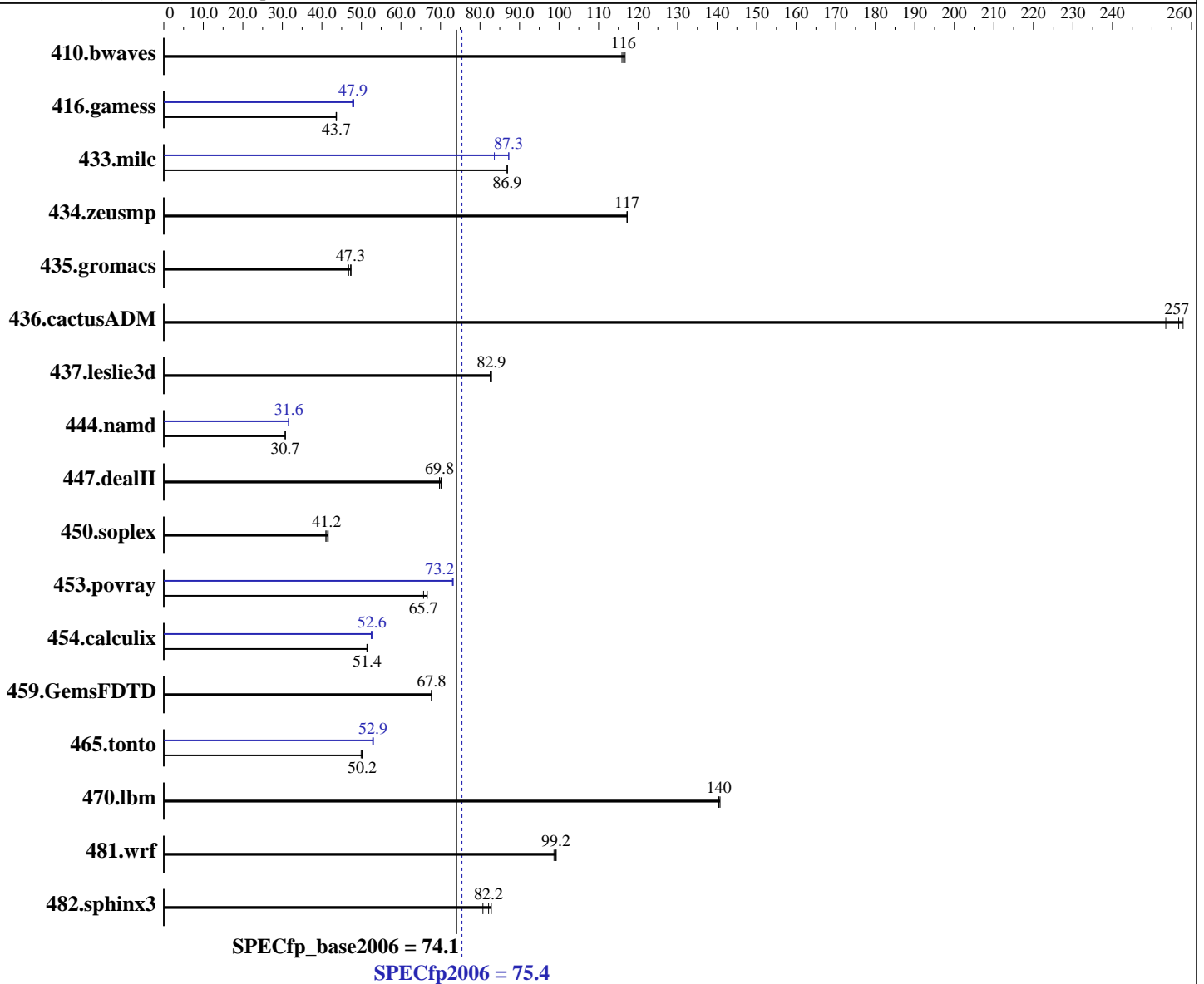
Test date: Oct-2013

Test sponsor: NEC Corporation

Hardware Availability: Oct-2013

Tested by: NEC Corporation

Software Availability: Mar-2013



### Hardware

CPU Name: Intel Xeon E3-1270 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz  
 CPU MHz: 3500  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 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 6.4 (Santiago)  
 Kernel 2.6.32-358.el6.x86\_64  
 Compiler: C/C++: Version 13.1.1.163 of Intel C++ Studio XE for Linux;  
 Fortran: Version 13.1.1.163 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 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	116	117	<b>117</b>	<b>116</b>	117	116	116	117	<b>117</b>	<b>116</b>	117	116
416.gamess	<b>448</b>	<b>43.7</b>	449	43.6	448	43.7	407	48.1	<b>409</b>	<b>47.9</b>	410	47.8
433.milc	<b>106</b>	<b>86.9</b>	106	86.9	106	86.8	<b>105</b>	<b>87.3</b>	110	83.6	105	87.3
434.zeusmp	77.6	117	77.6	117	<b>77.6</b>	<b>117</b>	77.6	117	77.6	117	<b>77.6</b>	<b>117</b>
435.gromacs	<b>151</b>	<b>47.3</b>	153	46.8	151	47.4	<b>151</b>	<b>47.3</b>	153	46.8	151	47.4
436.cactusADM	47.1	253	46.3	258	<b>46.5</b>	<b>257</b>	47.1	253	46.3	258	<b>46.5</b>	<b>257</b>
437.leslie3d	<b>113</b>	<b>82.9</b>	114	82.6	113	82.9	<b>113</b>	<b>82.9</b>	114	82.6	113	82.9
444.namd	261	30.7	<b>261</b>	<b>30.7</b>	261	30.7	<b>254</b>	<b>31.6</b>	254	31.6	254	31.6
447.dealII	<b>164</b>	<b>69.8</b>	164	69.8	163	70.2	<b>164</b>	<b>69.8</b>	164	69.8	163	70.2
450.soplex	<b>202</b>	<b>41.2</b>	203	41.0	201	41.6	<b>202</b>	<b>41.2</b>	203	41.0	201	41.6
453.povray	<b>81.0</b>	<b>65.7</b>	81.5	65.3	79.8	66.7	72.9	73.0	<b>72.7</b>	<b>73.2</b>	72.7	73.2
454.calculix	<b>160</b>	<b>51.4</b>	160	51.6	161	51.4	<b>157</b>	<b>52.6</b>	157	52.5	157	52.6
459.GemsFDTD	157	67.8	<b>157</b>	<b>67.8</b>	157	67.8	157	67.8	<b>157</b>	<b>67.8</b>	157	67.8
465.tonto	196	50.2	197	49.9	<b>196</b>	<b>50.2</b>	186	53.0	<b>186</b>	<b>52.9</b>	186	52.8
470.lbm	97.8	140	97.6	141	<b>97.8</b>	<b>140</b>	97.8	140	97.6	141	<b>97.8</b>	<b>140</b>
481.wrf	113	99.2	113	98.7	<b>113</b>	<b>99.2</b>	113	99.2	113	98.7	<b>113</b>	<b>99.2</b>
482.sphinx3	235	82.9	<b>237</b>	<b>82.2</b>	241	80.7	235	82.9	<b>237</b>	<b>82.2</b>	241	80.7

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  
 Hyper-Threading: Disabled

## 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"  
 OMP\_NUM\_THREADS = "4"

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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: `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-ic13-official-linux64.20130702.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-ic13-official-linux64.20130702.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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