



# SPEC® CFP2006 Result

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## NEC Corporation

SPECfp®2006 = **99.0**

Express5800/T110i (Intel Xeon E3-1225 v6)

SPECfp\_base2006 = **97.4**

CPU2006 license: 9006

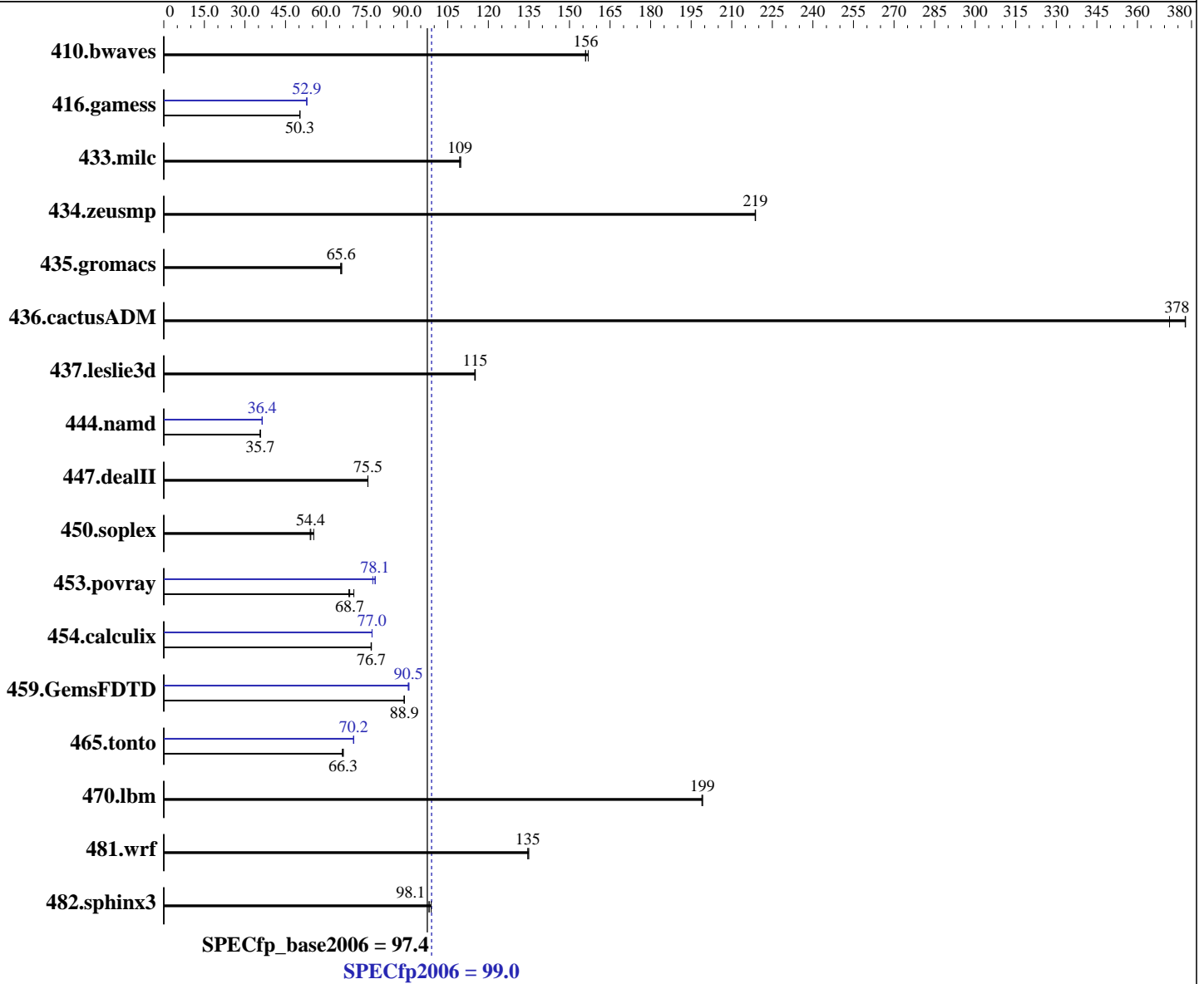
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Apr-2017

Hardware Availability: Apr-2017

Software Availability: Jan-2017



### Hardware

CPU Name: Intel Xeon E3-1225 v6  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3300  
 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 7.3 (Maipo)  
 Kernel 3.10.0-514.6.1.el7.x86\_64  
 Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux;  
 Fortran: Version 17.0.0.098 of Intel Fortran Compiler 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: 32 GB (2 x 16 GB 2Rx8 PC4-2400T-E)  
 Disk Subsystem: 1 x 1 TB 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>87.1</b>	<b>156</b>	86.6	157	87.2	156	<b>87.1</b>	<b>156</b>	86.6	157	87.2	156
416.gamess	<b>389</b>	<b>50.3</b>	389	50.3	389	50.3	<b>370</b>	<b>52.9</b>	370	52.9	370	52.9
433.milc	83.6	110	<b>83.9</b>	<b>109</b>	83.9	109	83.6	110	<b>83.9</b>	<b>109</b>	83.9	109
434.zeusmp	41.6	219	<b>41.6</b>	<b>219</b>	41.6	219	41.6	219	<b>41.6</b>	<b>219</b>	41.6	219
435.gromacs	108	65.8	<b>109</b>	<b>65.6</b>	109	65.4	108	65.8	<b>109</b>	<b>65.6</b>	109	65.4
436.cactusADM	31.6	378	<b>31.6</b>	<b>378</b>	32.1	372	31.6	378	<b>31.6</b>	<b>378</b>	32.1	372
437.leslie3d	81.6	115	<b>81.6</b>	<b>115</b>	81.8	115	81.6	115	<b>81.6</b>	<b>115</b>	81.8	115
444.namd	225	35.7	225	35.7	<b>225</b>	<b>35.7</b>	220	36.4	<b>220</b>	<b>36.4</b>	221	36.4
447.dealII	152	75.5	<b>152</b>	<b>75.5</b>	152	75.4	152	75.5	<b>152</b>	<b>75.5</b>	152	75.4
450.soplex	154	54.1	150	55.4	<b>153</b>	<b>54.4</b>	154	54.1	150	55.4	<b>153</b>	<b>54.4</b>
453.povray	77.7	68.4	<b>77.4</b>	<b>68.7</b>	75.7	70.3	<b>68.1</b>	<b>78.1</b>	68.9	77.3	68.1	78.2
454.calculix	107	76.8	108	76.6	<b>108</b>	<b>76.7</b>	<b>107</b>	<b>77.0</b>	107	77.0	107	77.0
459.GemsFDTD	119	88.9	<b>119</b>	<b>88.9</b>	119	88.9	117	90.4	117	90.7	<b>117</b>	<b>90.5</b>
465.tonto	148	66.4	<b>148</b>	<b>66.3</b>	149	66.0	140	70.2	<b>140</b>	<b>70.2</b>	140	70.2
470.lbm	<b>69.0</b>	<b>199</b>	69.0	199	69.1	199	<b>69.0</b>	<b>199</b>	69.0	199	69.1	199
481.wrf	83.0	135	<b>83.0</b>	<b>135</b>	82.8	135	83.0	135	<b>83.0</b>	<b>135</b>	82.8	135
482.sphinx3	199	98.1	197	98.9	<b>199</b>	<b>98.1</b>	199	98.1	197	98.9	<b>199</b>	<b>98.1</b>

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:  
 Power Management Policy: Custom  
 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/sh10.2"

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## General Notes (Continued)

OMP\_NUM\_THREADS = "4"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2  
Transparent Huge Pages enabled by default.

## 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.deallI: -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 -qopt-prefetch

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## Base Optimization Flags (Continued)

C++ benchmarks:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch`

Fortran benchmarks:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch`

Benchmarks using both Fortran and C:

`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch`

## 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: `basepeak = yes`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `-prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -fno-alias -auto-ilp32`

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## Peak Optimization Flags (Continued)

447.dealll: basepeak = yes

450.soplex: basepeak = yes

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -unroll2 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -unroll2 -inline-level=0  
-qopt-prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -inline-calloc -qopt-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

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-ic17.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110i-RevA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110i-RevA.xml>



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

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