



SPEC[®] CFP2006 Result

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NEC Corporation

SPECfp[®]2006 = **58.3**

Express5800/T120f (Intel Xeon E5-2603 v3)

SPECfp_base2006 = **56.6**

CPU2006 license: 9006

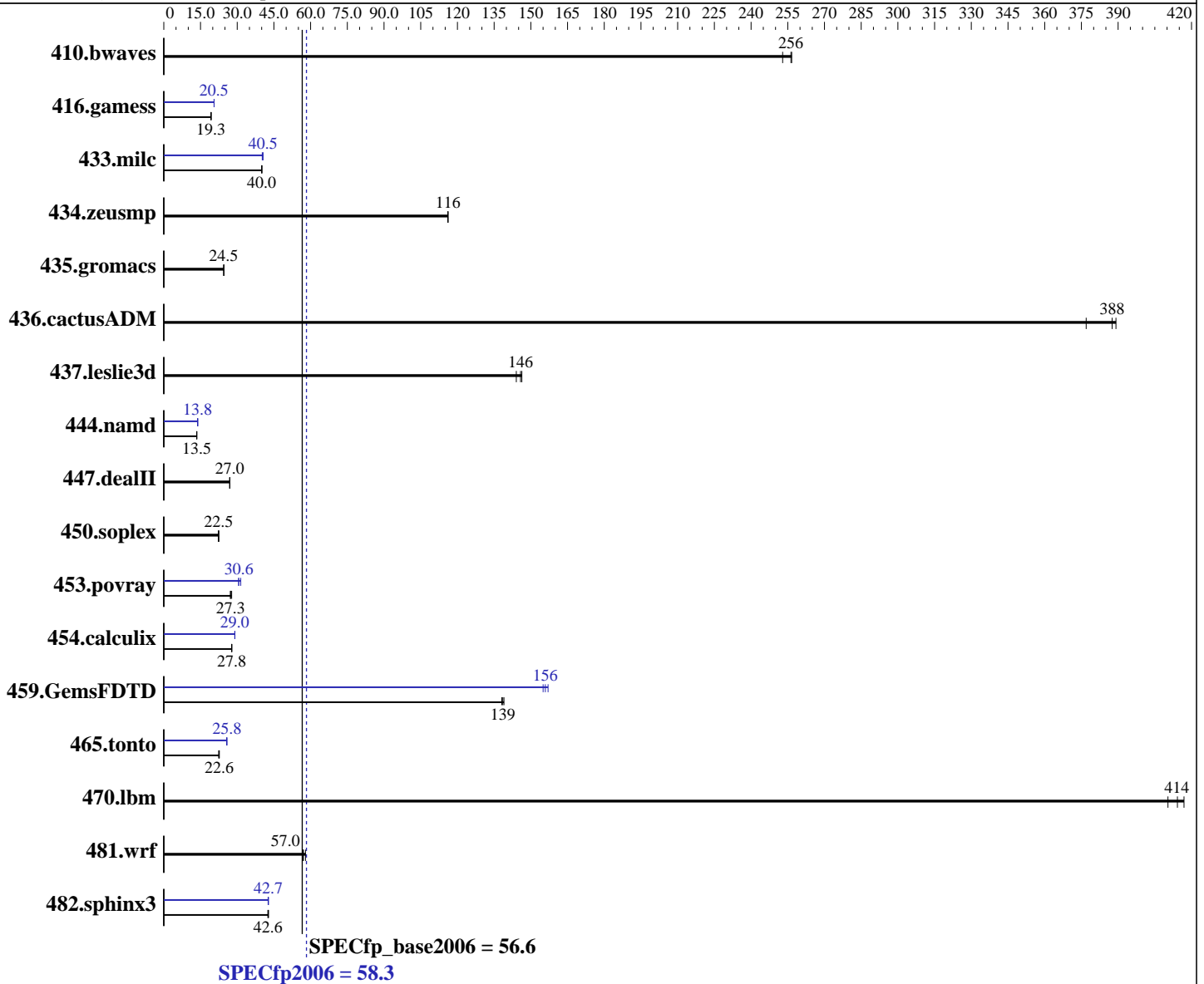
Test date: Mar-2015

Test sponsor: NEC Corporation

Hardware Availability: Jan-2015

Tested by: NEC Corporation

Software Availability: Jul-2014



Hardware

CPU Name: Intel Xeon E5-2603 v3
 CPU Characteristics:
 CPU MHz: 1600
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
 CPU(s) orderable: 1,2 chips
 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 2.6.32-431.20.3.el6.x86_64
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

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L3 Cache: 15 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
 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	53.7	253	53.0	257	<u>53.0</u>	<u>256</u>	53.7	253	53.0	257	<u>53.0</u>	<u>256</u>
416.gamess	<u>1015</u>	<u>19.3</u>	1012	19.4	1015	19.3	953	20.5	952	20.6	<u>953</u>	<u>20.5</u>
433.milc	229	40.1	<u>229</u>	<u>40.0</u>	230	40.0	226	40.5	228	40.2	<u>227</u>	<u>40.5</u>
434.zeusmp	78.3	116	<u>78.3</u>	<u>116</u>	78.4	116	78.3	116	<u>78.3</u>	<u>116</u>	78.4	116
435.gromacs	290	24.6	292	24.5	<u>291</u>	<u>24.5</u>	290	24.6	292	24.5	<u>291</u>	<u>24.5</u>
436.cactusADM	31.7	377	<u>30.8</u>	<u>388</u>	30.7	389	31.7	377	<u>30.8</u>	<u>388</u>	30.7	389
437.leslie3d	64.2	146	65.2	144	<u>64.5</u>	<u>146</u>	64.2	146	65.2	144	<u>64.5</u>	<u>146</u>
444.namd	595	13.5	<u>595</u>	<u>13.5</u>	595	13.5	579	13.8	580	13.8	<u>580</u>	<u>13.8</u>
447.dealII	426	26.9	<u>423</u>	<u>27.0</u>	423	27.0	426	26.9	<u>423</u>	<u>27.0</u>	423	27.0
450.soplex	374	22.3	<u>371</u>	<u>22.5</u>	371	22.5	374	22.3	<u>371</u>	<u>22.5</u>	371	22.5
453.povray	196	27.2	192	27.7	<u>195</u>	<u>27.3</u>	174	30.6	<u>174</u>	<u>30.6</u>	169	31.5
454.calculix	<u>297</u>	<u>27.8</u>	297	27.8	297	27.7	<u>284</u>	<u>29.0</u>	284	29.0	284	29.1
459.GemsFDTD	<u>76.6</u>	<u>139</u>	76.8	138	76.3	139	<u>68.1</u>	<u>156</u>	68.4	155	67.6	157
465.tonto	434	22.7	<u>435</u>	<u>22.6</u>	439	22.4	383	25.7	<u>382</u>	<u>25.8</u>	382	25.8
470.lbm	33.5	410	33.0	417	<u>33.2</u>	<u>414</u>	33.5	410	33.0	417	<u>33.2</u>	<u>414</u>
481.wrf	<u>196</u>	<u>57.0</u>	193	57.9	196	57.0	<u>196</u>	<u>57.0</u>	193	57.9	196	57.0
482.sphinx3	<u>457</u>	<u>42.6</u>	455	42.8	458	42.5	456	42.8	<u>456</u>	<u>42.7</u>	457	42.6

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
 Patrol Scrub: Disabled
 Early Snoop: Disabled



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General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,compact"

LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

OMP_NUM_THREADS = "12"

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 -parallel -opt-prefetch
-ansi-alias

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Base Optimization Flags (Continued)

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

470.lbm: basepeak = yes

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

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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.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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevC.html>



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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevC.xml>

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