



SPEC[®] CFP2006 Result

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NEC Corporation

SPECfp[®]2006 = 60.7

Express5800/E120e-M (Intel Xeon E5-2407 v2)

SPECfp_base2006 = 59.0

CPU2006 license: 9006

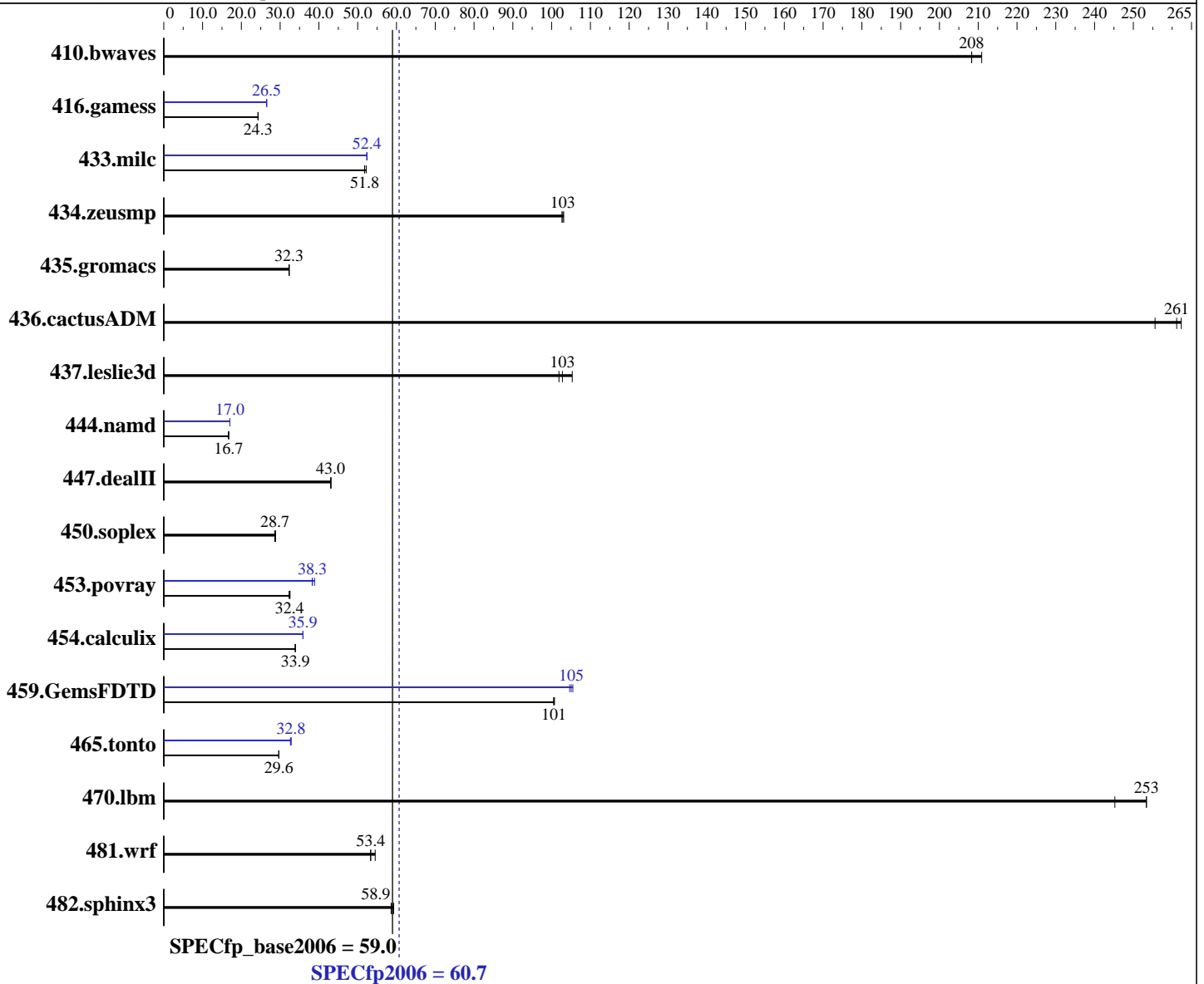
Test date: Apr-2014

Test sponsor: NEC Corporation

Hardware Availability: Jan-2014

Tested by: NEC Corporation

Software Availability: Oct-2013



Hardware

CPU Name: Intel Xeon E5-2407 v2
 CPU Characteristics:
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
 Kernel 2.6.32-358.23.2.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

Continued on next page



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L3 Cache: 10 MB I+D on chip per chip
 Other Cache: None
 Memory: 192 GB (12 x 16 GB 2Rx4 PC3L-12800R-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	64.4	211	65.2	208	<u>65.2</u>	<u>208</u>	64.4	211	65.2	208	<u>65.2</u>	<u>208</u>
416.gamess	806	24.3	<u>806</u>	<u>24.3</u>	805	24.3	<u>738</u>	<u>26.5</u>	739	26.5	738	26.5
433.milc	177	51.8	<u>177</u>	<u>51.8</u>	176	52.2	175	52.3	175	52.4	<u>175</u>	<u>52.4</u>
434.zeusmp	88.2	103	88.6	103	<u>88.4</u>	<u>103</u>	88.2	103	88.6	103	<u>88.4</u>	<u>103</u>
435.gromacs	<u>221</u>	<u>32.3</u>	221	32.3	221	32.3	<u>221</u>	<u>32.3</u>	221	32.3	221	32.3
436.cactusADM	45.5	262	46.8	256	<u>45.8</u>	<u>261</u>	45.5	262	46.8	256	<u>45.8</u>	<u>261</u>
437.leslie3d	92.3	102	89.3	105	<u>91.5</u>	<u>103</u>	92.3	102	89.3	105	<u>91.5</u>	<u>103</u>
444.namd	<u>480</u>	<u>16.7</u>	480	16.7	480	16.7	<u>471</u>	<u>17.0</u>	471	17.0	470	17.0
447.dealII	266	43.0	<u>266</u>	<u>43.0</u>	265	43.1	266	43.0	<u>266</u>	<u>43.0</u>	265	43.1
450.soplex	289	28.8	<u>291</u>	<u>28.7</u>	291	28.6	289	28.8	<u>291</u>	<u>28.7</u>	291	28.6
453.povray	<u>164</u>	<u>32.4</u>	165	32.3	163	32.6	<u>139</u>	<u>38.3</u>	137	38.9	139	38.3
454.calculix	<u>243</u>	<u>33.9</u>	243	33.9	243	33.9	230	35.9	230	35.9	<u>230</u>	<u>35.9</u>
459.GemsFDTD	105	101	106	101	<u>106</u>	<u>101</u>	<u>101</u>	<u>105</u>	101	105	101	105
465.tonto	331	29.7	<u>332</u>	<u>29.6</u>	332	29.6	301	32.7	300	32.8	<u>300</u>	<u>32.8</u>
470.lbm	<u>54.2</u>	<u>253</u>	54.2	253	56.0	245	<u>54.2</u>	<u>253</u>	54.2	253	56.0	245
481.wrf	210	53.3	<u>209</u>	<u>53.4</u>	205	54.5	210	53.3	<u>209</u>	<u>53.4</u>	205	54.5
482.sphinx3	333	58.6	329	59.3	<u>331</u>	<u>58.9</u>	333	58.6	329	59.3	<u>331</u>	<u>58.9</u>

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
 Memory Voltage: 1.5 V

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"

Continued on next page



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General Notes (Continued)

OMP_NUM_THREADS = "8"

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:

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

Continued on next page



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Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -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: -xAVX(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: -xAVX(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

Continued on next page



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Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(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: -xAVX(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: -xAVX(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: -xAVX(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: -xAVX -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.

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 23:15:31 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 22 April 2014.