



SPEC[®] CFP2006 Result

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NEC Corporation

SPECfp[®]2006 = **72.1**

Express5800/T110h (Intel Pentium G4400)

SPECfp_base2006 = **71.4**

CPU2006 license: 9006

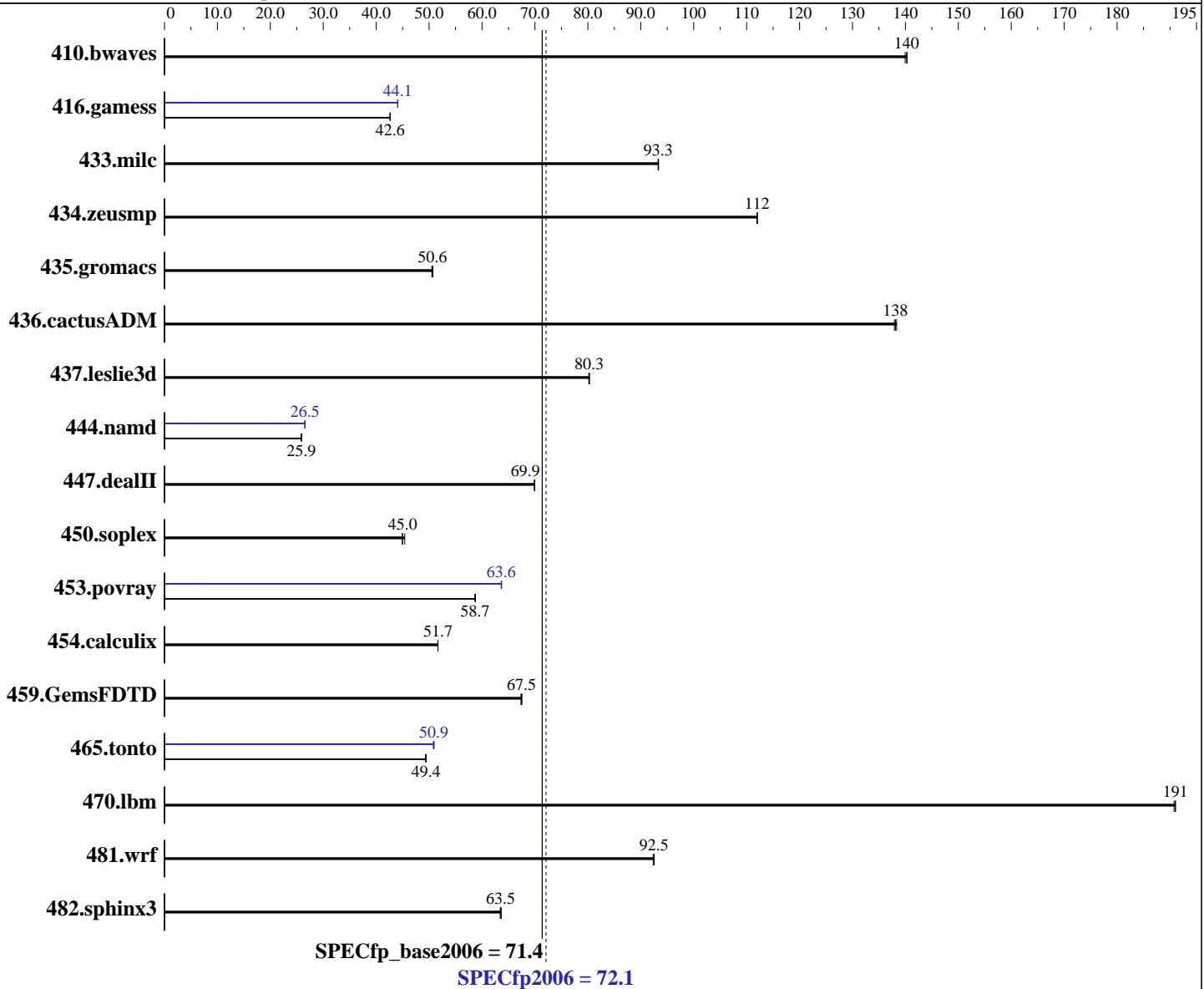
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Dec-2015

Hardware Availability: Mar-2016

Software Availability: Nov-2015



Hardware

CPU Name: Intel Pentium G4400
 CPU Characteristics:
 CPU MHz: 3300
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 7.2 (Maipo)
 Kernel 3.10.0-327.el7.x86_64
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;
 Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

Continued on next page



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L3 Cache: 3 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (2 x 8 GB 2Rx8 PC4-2133P-E)
 Disk Subsystem: 1 x 500 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	97.1	140	96.8	140	<u>96.9</u>	<u>140</u>	97.1	140	96.8	140	<u>96.9</u>	<u>140</u>
416.gamess	460	42.6	<u>459</u>	<u>42.6</u>	459	42.7	444	44.1	444	44.1	<u>444</u>	<u>44.1</u>
433.milc	<u>98.4</u>	<u>93.3</u>	98.3	93.4	98.4	93.3	<u>98.4</u>	<u>93.3</u>	98.3	93.4	98.4	93.3
434.zeusmp	<u>81.2</u>	<u>112</u>	81.2	112	81.3	112	<u>81.2</u>	<u>112</u>	81.2	112	81.3	112
435.gromacs	141	50.7	141	50.5	<u>141</u>	<u>50.6</u>	141	50.7	141	50.5	<u>141</u>	<u>50.6</u>
436.cactusADM	86.4	138	<u>86.5</u>	<u>138</u>	86.6	138	86.4	138	<u>86.5</u>	<u>138</u>	86.6	138
437.leslie3d	117	80.2	<u>117</u>	<u>80.3</u>	117	80.3	117	80.2	<u>117</u>	<u>80.3</u>	117	80.3
444.namd	310	25.9	<u>310</u>	<u>25.9</u>	310	25.8	303	26.5	<u>302</u>	<u>26.5</u>	302	26.6
447.dealII	<u>164</u>	<u>69.9</u>	164	69.9	164	70.0	<u>164</u>	<u>69.9</u>	164	69.9	164	70.0
450.soplex	186	44.9	<u>185</u>	<u>45.0</u>	184	45.4	186	44.9	<u>185</u>	<u>45.0</u>	184	45.4
453.povray	90.5	58.8	<u>90.6</u>	<u>58.7</u>	90.7	58.7	<u>83.6</u>	<u>63.6</u>	83.6	63.6	83.5	63.7
454.calculix	160	51.7	<u>160</u>	<u>51.7</u>	160	51.7	160	51.7	<u>160</u>	<u>51.7</u>	160	51.7
459.GemsFDTD	157	67.5	158	67.4	<u>157</u>	<u>67.5</u>	157	67.5	158	67.4	<u>157</u>	<u>67.5</u>
465.tonto	199	49.4	<u>199</u>	<u>49.4</u>	200	49.3	193	51.0	<u>193</u>	<u>50.9</u>	194	50.8
470.lbm	71.9	191	<u>71.9</u>	<u>191</u>	72.0	191	71.9	191	<u>71.9</u>	<u>191</u>	72.0	191
481.wrf	<u>121</u>	<u>92.5</u>	121	92.5	121	92.4	<u>121</u>	<u>92.5</u>	121	92.5	121	92.4
482.sphinx3	306	63.6	307	63.4	<u>307</u>	<u>63.5</u>	306	63.6	307	63.4	<u>307</u>	<u>63.5</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:
 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/sh"

Continued on next page



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General Notes (Continued)

OMP_NUM_THREADS = "2"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/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.lelie3d: -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:

-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

Continued on next page



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Base Optimization Flags (Continued)

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.2 -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: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-prof-use(pass 2) -fno-alias -auto-ilp32

Continued on next page



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Peak Optimization Flags (Continued)

447.dealll: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-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: basepeak = yes

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-ic16.0-official-linux64.html>

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

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

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



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For other inquiries, please contact webmaster@spec.org.

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