



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

SPECfp®2006 = **40.6**

### Express5800/GT110e (Intel Pentium G640)

SPECfp\_base2006 = **39.9**

CPU2006 license: 9006

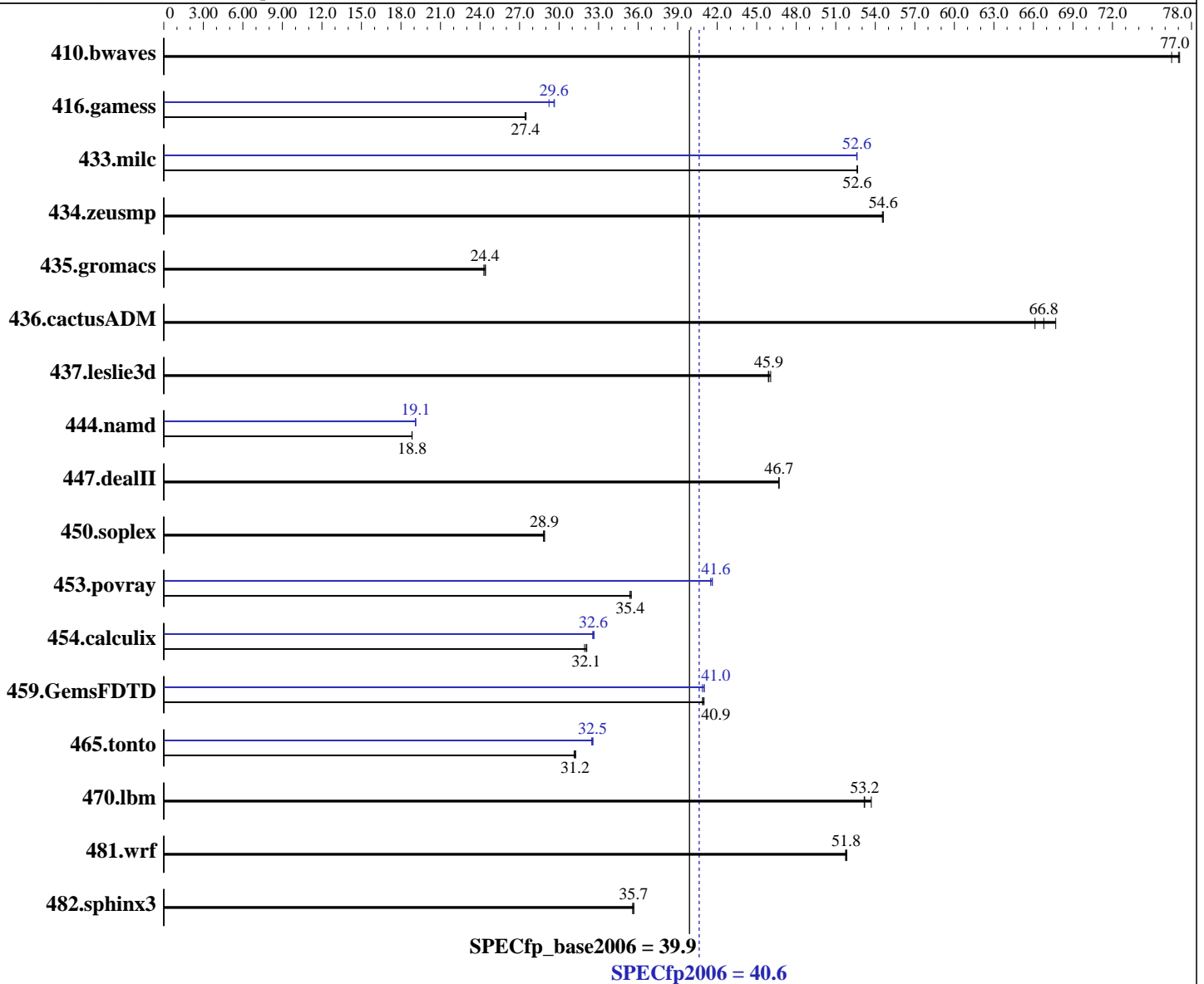
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2012

Hardware Availability: Jul-2012

Software Availability: Feb-2012



**Hardware**

CPU Name: Intel Pentium G640  
 CPU Characteristics:  
 CPU MHz: 2800  
 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

**Software**

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 Kernel 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.3.293 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4

Continued on next page

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

SPECfp2006 = **40.6**

### Express5800/GT110e (Intel Pentium G640)

SPECfp\_base2006 = **39.9**

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2012

Hardware Availability: Jul-2012

Software Availability: Feb-2012

L3 Cache: 3 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC, running at 1066 MHz and CL7)  
 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	178	76.5	176	77.1	<b>176</b>	<b>77.0</b>	178	76.5	176	77.1	<b>176</b>	<b>77.0</b>
416.gamess	<b>713</b>	<b>27.4</b>	714	27.4	712	27.5	660	29.7	<b>661</b>	<b>29.6</b>	670	29.2
433.milc	<b>174</b>	<b>52.6</b>	174	52.6	174	52.6	174	52.6	175	52.6	<b>175</b>	<b>52.6</b>
434.zeusmp	<b>167</b>	<b>54.6</b>	167	54.5	167	54.6	<b>167</b>	<b>54.6</b>	167	54.5	167	54.6
435.gromacs	294	24.3	<b>293</b>	<b>24.4</b>	292	24.4	294	24.3	<b>293</b>	<b>24.4</b>	292	24.4
436.cactusADM	177	67.7	<b>179</b>	<b>66.8</b>	181	66.1	177	67.7	<b>179</b>	<b>66.8</b>	181	66.1
437.leslie3d	<b>205</b>	<b>45.9</b>	205	45.9	204	46.1	<b>205</b>	<b>45.9</b>	205	45.9	204	46.1
444.namd	<b>426</b>	<b>18.8</b>	426	18.8	426	18.8	420	19.1	<b>420</b>	<b>19.1</b>	420	19.1
447.dealII	245	46.7	245	46.7	<b>245</b>	<b>46.7</b>	245	46.7	245	46.7	<b>245</b>	<b>46.7</b>
450.soplex	289	28.8	289	28.9	<b>289</b>	<b>28.9</b>	289	28.8	289	28.9	<b>289</b>	<b>28.9</b>
453.povray	150	35.4	<b>150</b>	<b>35.4</b>	150	35.5	128	41.5	128	41.6	<b>128</b>	<b>41.6</b>
454.calculix	257	32.1	258	31.9	<b>257</b>	<b>32.1</b>	253	32.5	<b>253</b>	<b>32.6</b>	253	32.7
459.GemsFDTD	259	41.0	<b>259</b>	<b>40.9</b>	260	40.9	259	41.0	260	40.9	<b>259</b>	<b>41.0</b>
465.tonto	315	31.3	316	31.1	<b>315</b>	<b>31.2</b>	<b>302</b>	<b>32.5</b>	302	32.6	303	32.5
470.lbm	258	53.2	<b>258</b>	<b>53.2</b>	256	53.7	258	53.2	<b>258</b>	<b>53.2</b>	256	53.7
481.wrf	215	51.8	216	51.7	<b>216</b>	<b>51.8</b>	215	51.8	216	51.7	<b>216</b>	<b>51.8</b>
482.sphinx3	548	35.6	<b>547</b>	<b>35.7</b>	546	35.7	548	35.6	<b>547</b>	<b>35.7</b>	546	35.7

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

Default BIOS settings were used.

## General Notes

Environment variables set by runspec before the start of the run:  
 KMP\_AFFINITY = "granularity=fine,scatter"  
 LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"  
 OMP\_NUM\_THREADS = "2"

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp2006 = 40.6

Express5800/GT110e (Intel Pentium G640)

SPECfp\_base2006 = 39.9

CPU2006 license: 9006

Test date: Jul-2012

Test sponsor: NEC Corporation

Hardware Availability: Jul-2012

Tested by: NEC Corporation

Software Availability: Feb-2012

## General Notes (Continued)

Added glibc-static-2.12-1.47.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.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:

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp2006 = 40.6

Express5800/GT110e (Intel Pentium G640)

SPECfp\_base2006 = 39.9

CPU2006 license: 9006

Test date: Jul-2012

Test sponsor: NEC Corporation

Hardware Availability: Jul-2012

Tested by: NEC Corporation

Software Availability: Feb-2012

## Base Optimization Flags (Continued)

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

`-xSSE4.2 -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: `-xSSE4.2(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: `-xSSE4.2(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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp2006 = 40.6

Express5800/GT110e (Intel Pentium G640)

SPECfp\_base2006 = 39.9

CPU2006 license: 9006

Test date: Jul-2012

Test sponsor: NEC Corporation

Hardware Availability: Jul-2012

Tested by: NEC Corporation

Software Availability: Feb-2012

## Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2 -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-ic12.1-official-linux64.20120425.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-ic12.1-official-linux64.20120425.xml>  
<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.xml>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp2006 = 40.6

Express5800/GT110e (Intel Pentium G640)

SPECfp\_base2006 = 39.9

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2012

Hardware Availability: Jul-2012

Software Availability: Feb-2012

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 11:36:33 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 31 July 2012.