



SPEC® CFP2006 Result

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NEC Corporation

SPECfp®_rate2006 = 56.1

Express5800/GT110d-S (Intel Pentium G620)

SPECfp_rate_base2006 = 54.4

CPU2006 license: 9006

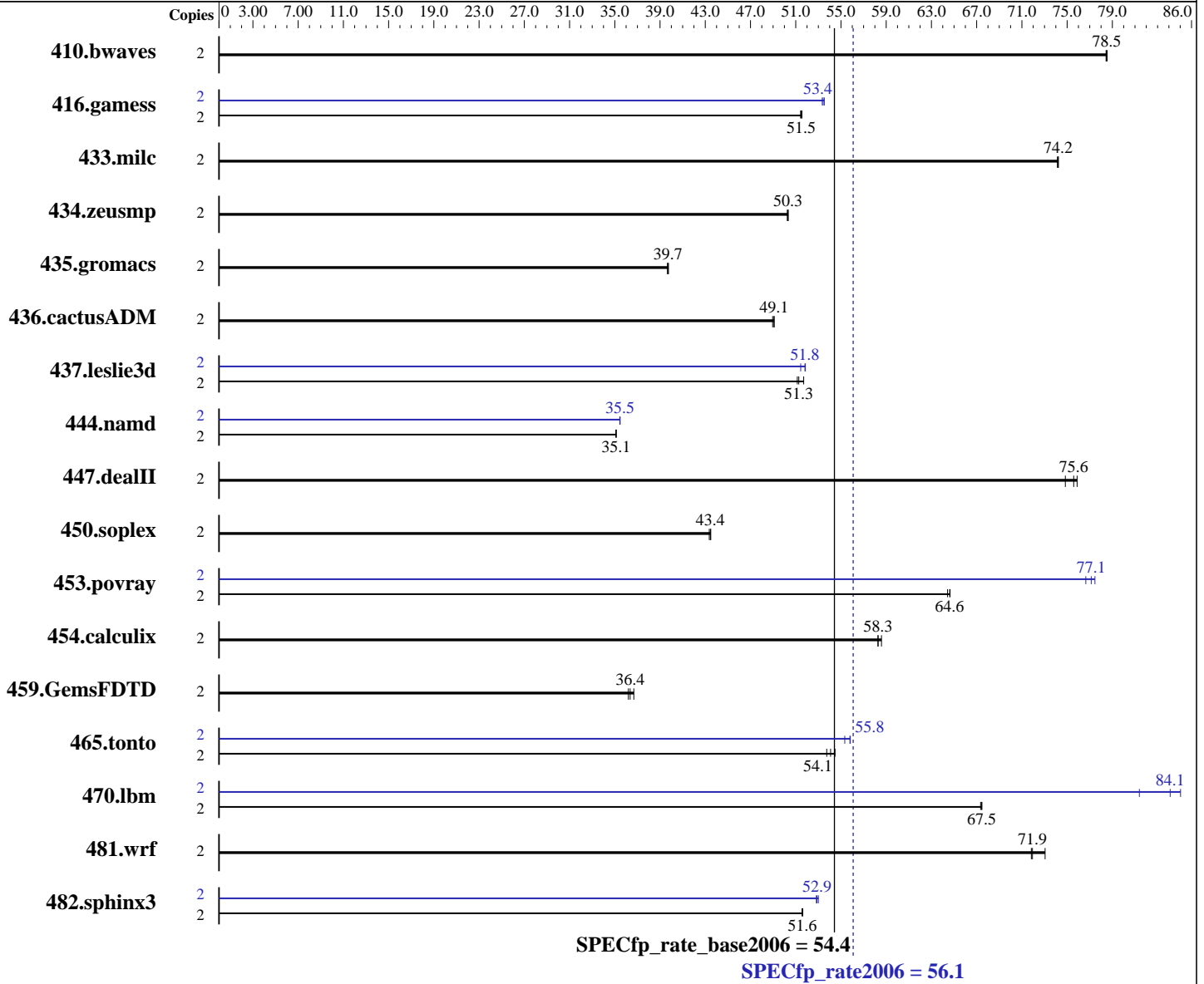
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2011

Hardware Availability: Jun-2011

Software Availability: Mar-2011



Hardware

CPU Name: Intel Pentium G620
 CPU Characteristics:
 CPU MHz: 2600
 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

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Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64, Version 12.0.3.174 Build 20110309
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: 3 MB I+D on chip per chip
 Other Cache: None
 Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC, running at 1067 MHz and CL7)
 Disk Subsystem: 1 x 160 GB SATA, 7200 RPM
 Other Hardware: None

Peak Pointers: 32/64-bit
 Other Software: None

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---------------|--------|------------|-------------|------------|-------------|------------|-------------|--------|------------|-------------|------------|-------------|------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 2 | 346 | 78.5 | 346 | 78.5 | 346 | 78.4 | 2 | 346 | 78.5 | 346 | 78.5 | 346 | 78.4 |
| 416.gamess | 2 | 760 | 51.5 | 761 | 51.4 | 761 | 51.5 | 2 | 734 | 53.3 | 732 | 53.5 | 733 | 53.4 |
| 433.milc | 2 | 247 | 74.2 | 247 | 74.2 | 248 | 74.1 | 2 | 247 | 74.2 | 247 | 74.2 | 248 | 74.1 |
| 434.zeusmp | 2 | 362 | 50.3 | 362 | 50.3 | 362 | 50.2 | 2 | 362 | 50.3 | 362 | 50.3 | 362 | 50.2 |
| 435.gromacs | 2 | 359 | 39.7 | 360 | 39.7 | 360 | 39.7 | 2 | 359 | 39.7 | 360 | 39.7 | 360 | 39.7 |
| 436.cactusADM | 2 | 488 | 49.0 | 487 | 49.1 | 487 | 49.1 | 2 | 488 | 49.0 | 487 | 49.1 | 487 | 49.1 |
| 437.leslie3d | 2 | 368 | 51.1 | 367 | 51.3 | 364 | 51.7 | 2 | 363 | 51.9 | 363 | 51.8 | 365 | 51.4 |
| 444.namd | 2 | 457 | 35.1 | 457 | 35.1 | 457 | 35.1 | 2 | 452 | 35.5 | 453 | 35.4 | 452 | 35.5 |
| 447.dealII | 2 | 303 | 75.6 | 302 | 75.9 | 306 | 74.8 | 2 | 303 | 75.6 | 302 | 75.9 | 306 | 74.8 |
| 450.soplex | 2 | 384 | 43.5 | 385 | 43.4 | 384 | 43.4 | 2 | 384 | 43.5 | 385 | 43.4 | 384 | 43.4 |
| 453.povray | 2 | 165 | 64.6 | 165 | 64.6 | 165 | 64.4 | 2 | 138 | 77.1 | 139 | 76.7 | 137 | 77.5 |
| 454.calculix | 2 | 282 | 58.6 | 283 | 58.3 | 283 | 58.3 | 2 | 282 | 58.6 | 283 | 58.3 | 283 | 58.3 |
| 459.GemsFDTD | 2 | 584 | 36.4 | 578 | 36.7 | 586 | 36.2 | 2 | 584 | 36.4 | 578 | 36.7 | 586 | 36.2 |
| 465.tonto | 2 | 366 | 53.7 | 364 | 54.1 | 361 | 54.5 | 2 | 353 | 55.8 | 356 | 55.3 | 353 | 55.8 |
| 470.lbm | 2 | 408 | 67.3 | 407 | 67.5 | 407 | 67.5 | 2 | 323 | 85.0 | 338 | 81.4 | 327 | 84.1 |
| 481.wrf | 2 | 306 | 73.1 | 311 | 71.9 | 311 | 71.8 | 2 | 306 | 73.1 | 311 | 71.9 | 311 | 71.8 |
| 482.sphinx3 | 2 | 756 | 51.6 | 756 | 51.6 | 755 | 51.6 | 2 | 738 | 52.8 | 735 | 53.0 | 737 | 52.9 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.
numactl was used to bind copies to the cores

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
Huge pages were not configured for this run

Platform Notes

Default BIOS settings were used.



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General Notes

The Express5800/GT110d (Intel Pentium G620) and the Express5800/GT110d-S (Intel Pentium G620) models are electronically equivalent. The results have been measured on the Express5800/GT110d-S (Intel Pentium G620) model.

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:

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

C++ benchmarks:

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

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Base Optimization Flags (Continued)

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:

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

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak 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



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Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
-ansi-alias -opt-prefetch -static -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2

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

447.dealIII: 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
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

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: -xSSE4.2 -ipo -O3 -no-prec-div
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

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) -unroll4 -auto
-inline-calloc -opt-malloc-options=3
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

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Peak Optimization Flags (Continued)

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-ic12.0-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revF.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revF.xml>

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

Tested with SPEC CPU2006 v1.1.

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