SPEC® CFP2006 Result

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NEC Corporation

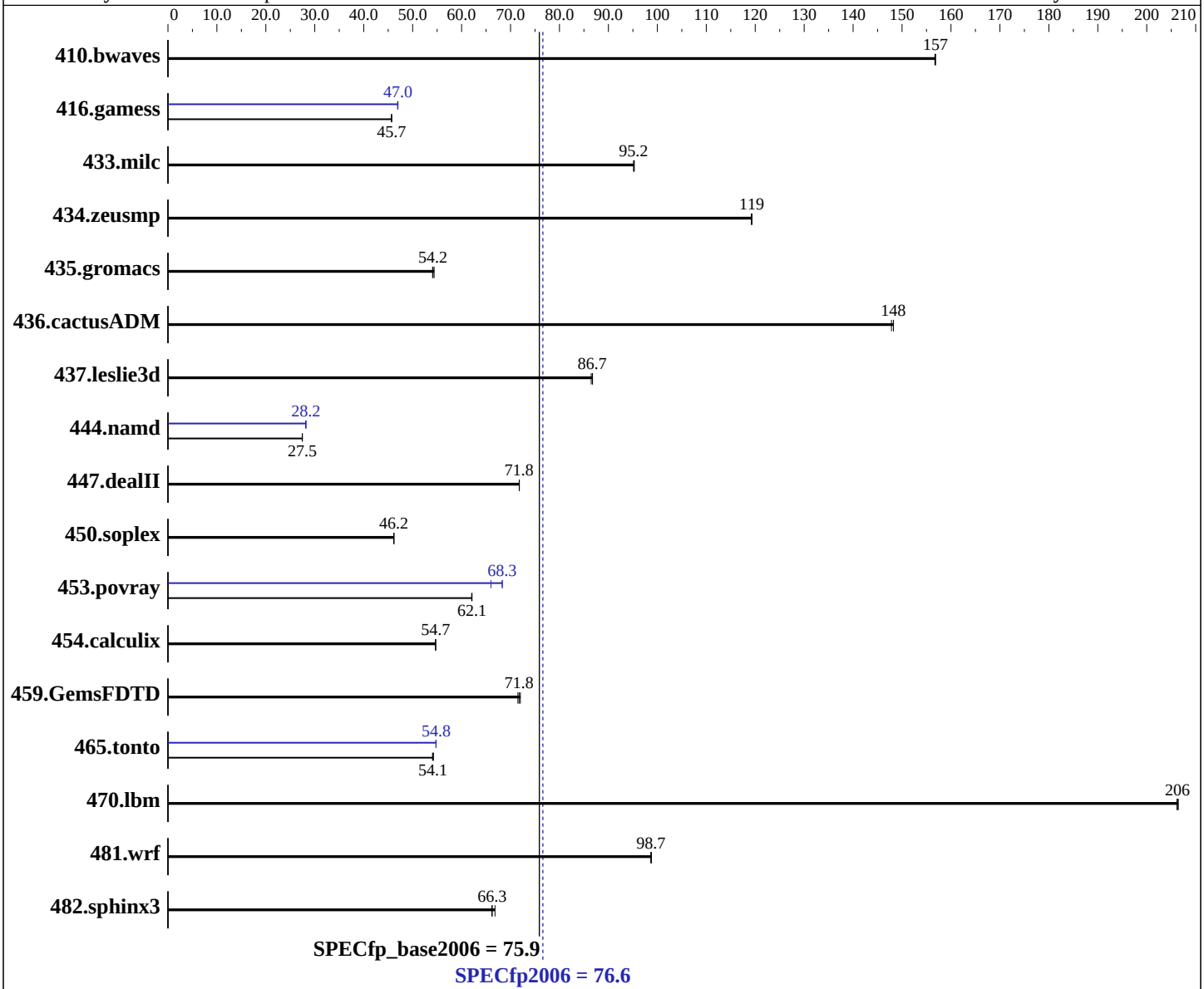
Express5800/GT110i (Intel Pentium G4560)

SPECfp®2006 = 76.6

SPECfp_base2006 = 75.9

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Apr-2017
Hardware Availability: Apr-2017
Software Availability: Jan-2017



Hardware

CPU Name:	Intel Pentium G4560
CPU Characteristics:	
CPU MHz:	3500
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:	Red Hat Enterprise Linux Server release 7.3 (Maipo) Kernel 3.10.0-514.6.1.el7.x86_64
Compiler:	C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux; Fortran: Version 17.0.0.098 of Intel Fortran Compiler for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache: 3 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (2 x 16 GB 2Rx8 PC4-2400T-E)
Disk Subsystem: 1 x 1 TB 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	86.7	157	86.7	157	**86.7**	**157**	86.7	157	86.7	157	**86.7**	**157**
416.gamess	429	45.7	428	45.7	**428**	**45.7**	**417**	**47.0**	417	47.0	417	46.9
433.milc	96.3	95.3	96.5	95.2	**96.5**	**95.2**	96.3	95.3	96.5	95.2	**96.5**	**95.2**
434.zeusmp	**76.3**	**119**	76.3	119	76.3	119	**76.3**	**119**	76.3	119	76.3	119
435.gromacs	132	54.1	131	54.4	**132**	**54.2**	132	54.1	131	54.4	**132**	**54.2**
436.cactusADM	80.6	148	**80.6**	**148**	80.8	148	80.6	148	**80.6**	**148**	80.8	148
437.leslie3d	108	86.8	**108**	**86.7**	109	86.5	108	86.8	**108**	**86.7**	109	86.5
444.namd	292	27.5	**292**	**27.5**	292	27.4	285	28.2	284	28.2	**285**	**28.2**
447.dealII	159	71.8	**159**	**71.8**	159	71.8	159	71.8	**159**	**71.8**	159	71.8
450.soplex	181	46.2	**181**	**46.2**	181	46.1	181	46.2	**181**	**46.2**	181	46.1
453.povray	**85.6**	**62.1**	85.7	62.1	85.6	62.1	77.9	68.3	80.6	66.0	**77.9**	**68.3**
454.calculix	151	54.7	**151**	**54.7**	151	54.7	151	54.7	**151**	**54.7**	151	54.7
459.GemsFDTD	147	72.0	**148**	**71.8**	148	71.5	147	72.0	**148**	**71.8**	148	71.5
465.tonto	**182**	**54.1**	181	54.2	182	54.1	**180**	**54.8**	180	54.7	180	54.8
470.lbm	66.7	206	66.6	206	**66.6**	**206**	66.7	206	66.6	206	**66.6**	**206**
481.wrf	113	98.7	113	98.8	**113**	**98.7**	113	98.7	113	98.8	**113**	**98.7**
482.sphinx3	294	66.2	292	66.8	**294**	**66.3**	294	66.2	292	66.8	**294**	**66.3**

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
 Hyper-Threading: Disabled
```

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/sh10.2"
OMP_NUM_THREADS = "2"

 Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
 memory using Redhat Enterprise Linux 7.2
 Transparent Huge Pages enabled by default.
```

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 -parallel -qopt-prefetch`

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch`

Fortran benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch`

Benchmarks using both Fortran and C:
`-xSSE4.2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch`

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

Continued on next page

Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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

Fortran benchmarks:

410.bwaves: basepeak = yes

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

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -inline-calloc -qopt-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-ic17.0-official-linux64.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110i-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-110i-RevA.xml

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