SPEC® CFP2006 Result
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NEC Corporation

Express5800/T110i (Intel Pentium G4560)

$SPECfp^{®}\_rate2006 =$ 124

SPECfp_rate_base2006 = 121

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

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

SPECfp_rate_base2006 = 121

SPECfp_rate2006 = 124

Hardware

CPU Name:	Intel Pentium G4560
CPU Characteristics:	
CPU MHz:	3500
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip, 2 threads/core
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:	No
File System:	ext4

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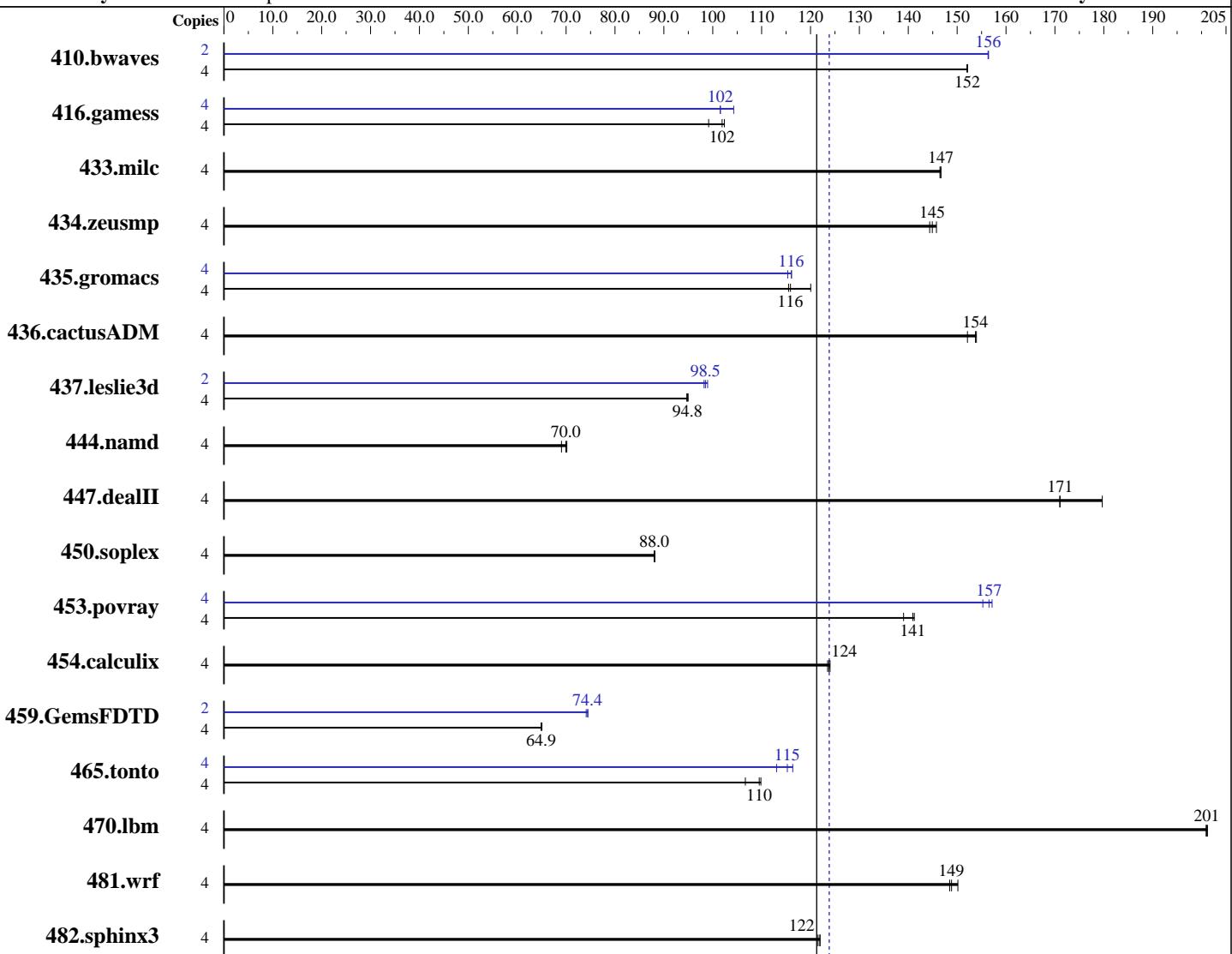Express5800/T110i (Intel Pentium G4560)

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L3 Cache:	3 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	32 GB (2 x 16 GB 2Rx8 PC4-2400T-E)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x 1 TB SATA, 7200 RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	357	152	**357**	**152**	358	152	2	174	156	174	156	**174**	**156**
416.gamess	4	790	99.2	**768**	**102**	765	102	4	771	102	**771**	**102**	751	104
433.milc	4	250	147	**250**	**147**	251	146	4	250	147	**250**	**147**	251	146
434.zeusmp	4	252	144	250	146	**251**	**145**	4	252	144	250	146	**251**	**145**
435.gromacs	4	247	116	238	120	**246**	**116**	4	248	115	246	116	**246**	**116**
436.cactusADM	4	314	152	**311**	**154**	311	154	4	314	152	**311**	**154**	311	154
437.leslie3d	4	**397**	**94.8**	396	95.0	397	94.7	2	**191**	**98.5**	190	99.0	191	98.2
444.namd	4	**459**	**70.0**	465	69.1	457	70.2	4	**459**	**70.0**	465	69.1	457	70.2
447.dealII	4	255	180	268	171	**268**	**171**	4	255	180	268	171	**268**	**171**
450.soplex	4	**379**	**88.0**	379	88.0	378	88.2	4	**379**	**88.0**	379	88.0	378	88.2
453.povray	4	153	139	**151**	**141**	151	141	4	137	155	**136**	**157**	135	157
454.calculix	4	**267**	**124**	267	123	266	124	4	**267**	**124**	267	123	266	124
459.GemsFDTD	4	652	65.1	654	64.9	**654**	**64.9**	2	285	74.5	286	74.1	**285**	**74.4**
465.tonto	4	358	110	369	107	**359**	**110**	4	338	116	348	113	**341**	**115**
470.lbm	4	274	201	273	201	**273**	**201**	4	274	201	273	201	**273**	**201**
481.wrf	4	**300**	**149**	298	150	301	148	4	**300**	**149**	298	150	301	148
482.sphinx3	4	639	122	**639**	**122**	641	122	4	639	122	**639**	**122**	641	122

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

Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS Settings:
 Power Management Policy: Custom
 Energy Performance: Performance

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General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh10.2"

 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 -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
```

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Base Optimization Flags (Continued)

C++ benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
```

Fortran benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch
```

Benchmarks using both Fortran and C:

```
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
```

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: basepeak = yes
```

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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 -qopt-mem-layout-trans=3

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch

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: Same as 410.bwaves

459.GemsFDTD: Same as 410.bwaves

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) -unroll4 -auto -inline-calloc
-qopt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.2(pass 2)
-par-num-threads=1(pass 1) -qopt-prefetch -auto-ilp32
-qopt-mem-layout-trans=3

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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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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