SPEC® CFP2006 Result

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Fujitsu

PRIMERGY TX1330 M1, Intel Pentium G3420, 3.20 GHz

$SPECfp®\_rate2006 =$ 77.7

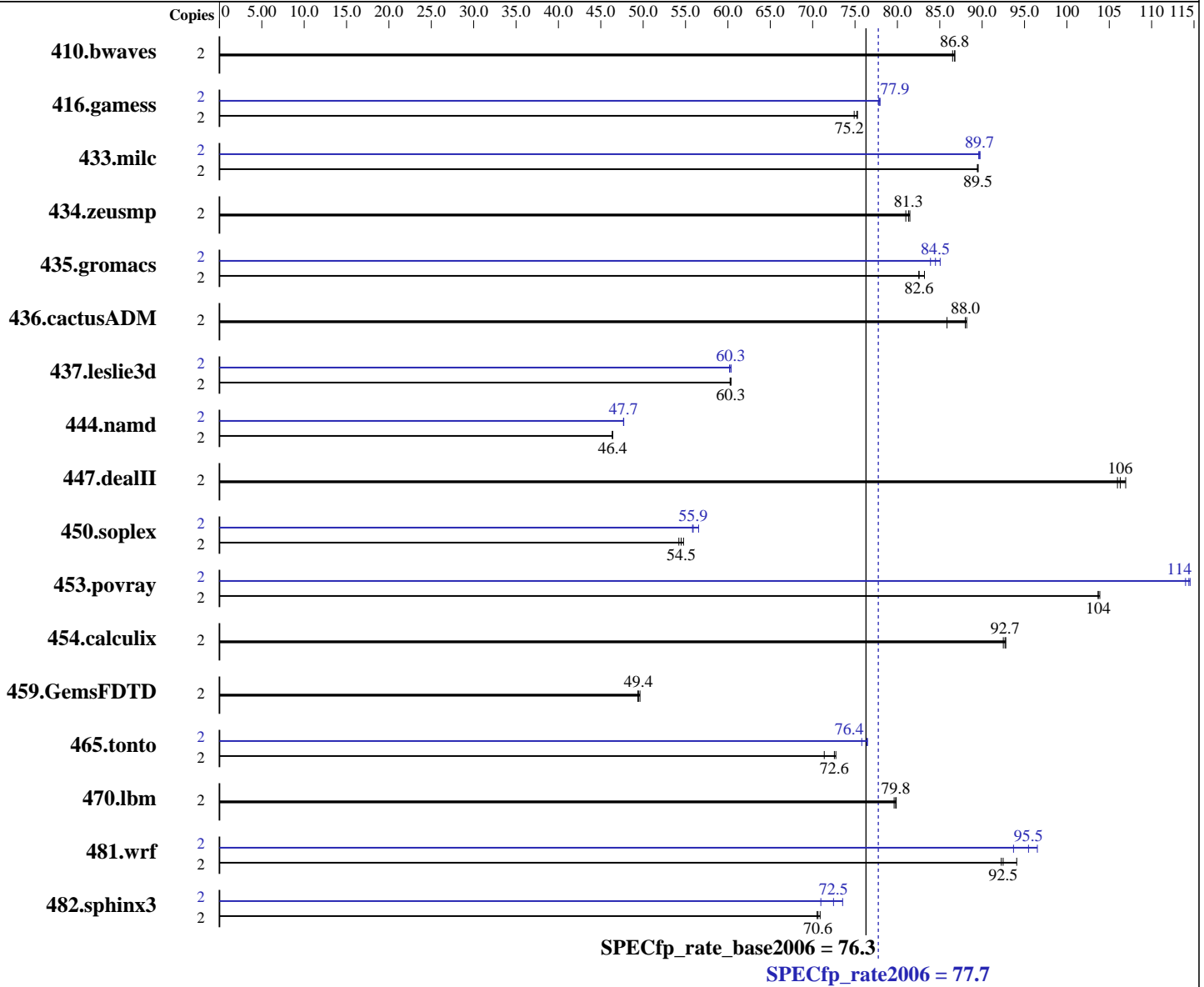$SPECfp\_rate\_base2006 =$ 76.3

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Jul-2014
Hardware Availability: Jul-2014
Software Availability: Nov-2013

Results chart (Copies = 2 for each):
- 410.bwaves: 86.8
- 416.gamess: 77.9 / 75.2
- 433.milc: 89.7 / 89.5
- 434.zeusmp: 81.3
- 435.gromacs: 84.5 / 82.6
- 436.cactusADM: 88.0
- 437.leslie3d: 60.3 / 60.3
- 444.namd: 47.7 / 46.4
- 447.dealII: 106
- 450.soplex: 55.9 / 54.5
- 453.povray: 114 / 104
- 454.calculix: 92.7
- 459.GemsFDTD: 49.4
- 465.tonto: 76.4 / 72.6
- 470.lbm: 79.8
- 481.wrf: 95.5 / 92.5
- 482.sphinx3: 72.5 / 70.6

SPECfp_rate_base2006 = 76.3

SPECfp_rate2006 = 77.7

Hardware

CPU Name: Intel Pentium G3420
CPU Characteristics:
CPU MHz: 3200
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 6.5 (Santiago)
2.6.32-431.el6.x86_64
Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
Auto Parallel: No
File System: ext4

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L3 Cache:	3 MB I+D on chip per chip	System State:	Run level 5 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	32 GB (4 x 8 GB 2Rx8 PC3L-12800E-11, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x SATA, 500 GB, 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	2	314	86.5	313	86.8	**313**	**86.8**	2	314	86.5	313	86.8	**313**	**86.8**
416.gamess	2	523	74.9	520	75.3	**521**	**75.2**	2	502	78.0	**503**	**77.9**	503	77.8
433.milc	2	205	89.4	205	89.5	**205**	**89.5**	2	**205**	**89.7**	205	89.6	205	89.8
434.zeusmp	2	223	81.5	225	81.0	**224**	**81.3**	2	223	81.5	225	81.0	**224**	**81.3**
435.gromacs	2	173	82.5	172	83.2	**173**	**82.6**	2	**169**	**84.5**	168	85.0	170	83.9
436.cactusADM	2	**272**	**88.0**	271	88.2	278	85.9	2	**272**	**88.0**	271	88.2	278	85.9
437.leslie3d	2	312	60.3	311	60.4	**312**	**60.3**	2	**312**	**60.3**	311	60.4	312	60.2
444.namd	2	**346**	**46.4**	346	46.4	346	46.4	2	336	47.7	**336**	**47.7**	336	47.7
447.dealII	2	214	107	**215**	**106**	216	106	2	214	107	**215**	**106**	216	106
450.soplex	2	305	54.8	**306**	**54.5**	308	54.2	2	299	55.8	295	56.5	**298**	**55.9**
453.povray	2	103	104	**103**	**104**	102	104	2	**93.0**	**114**	92.9	115	93.3	114
454.calculix	2	**178**	**92.7**	178	92.8	178	92.5	2	**178**	**92.7**	178	92.8	178	92.5
459.GemsFDTD	2	**429**	**49.4**	428	49.6	430	49.4	2	**429**	**49.4**	428	49.6	430	49.4
465.tonto	2	276	71.4	**271**	**72.6**	271	72.7	2	**258**	**76.4**	260	75.8	257	76.5
470.lbm	2	344	79.9	345	79.6	**344**	**79.8**	2	344	79.9	345	79.6	**344**	**79.8**
481.wrf	2	237	94.1	**242**	**92.5**	242	92.3	2	238	93.7	**234**	**95.5**	231	96.5
482.sphinx3	2	550	70.9	**552**	**70.6**	553	70.5	2	549	71.0	530	73.5	**538**	**72.5**

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl 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"

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64:/SPECcpu2006/sh"

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General Notes (Continued)

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1>        /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
For information about Fujitsu please visit: http://www.fujitsu.com
```

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
```

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Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3
```

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

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc    -m64
```

```
482.sphinx3: icc -m32
```

C++ benchmarks (except as noted below):
```
icpc   -m64
```

```
450.soplex: icpc -m32
```

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
      453.povray: -DSPEC_CPU_LP64
```

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Peak Portability Flags (Continued)

```
    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
```

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) -opt-mem-layout-trans=3(pass 2)
                -prof-use(pass 2) -auto-ilp32

       470.lbm: basepeak = yes

    482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
                -unroll2
```

C++ benchmarks:

```
      444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
                -prof-use(pass 2) -fno-alias -auto-ilp32

     447.dealII: basepeak = yes

     450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
                -prof-use(pass 2) -opt-malloc-options=3

     453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -opt-mem-layout-trans=3(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-

    434.zeusmp: basepeak = yes

    437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch
```

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Peak Optimization Flags (Continued)

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

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revB.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20130924.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64-revB.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20130924.xml

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

Tested with SPEC CPU2006 v1.2.
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