SPEC® CFP2006 Result
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Supermicro

SuperServer 5017C-MF (X9SCL-F, Intel G620)

$SPECfp®\_rate2006 = 56.7$

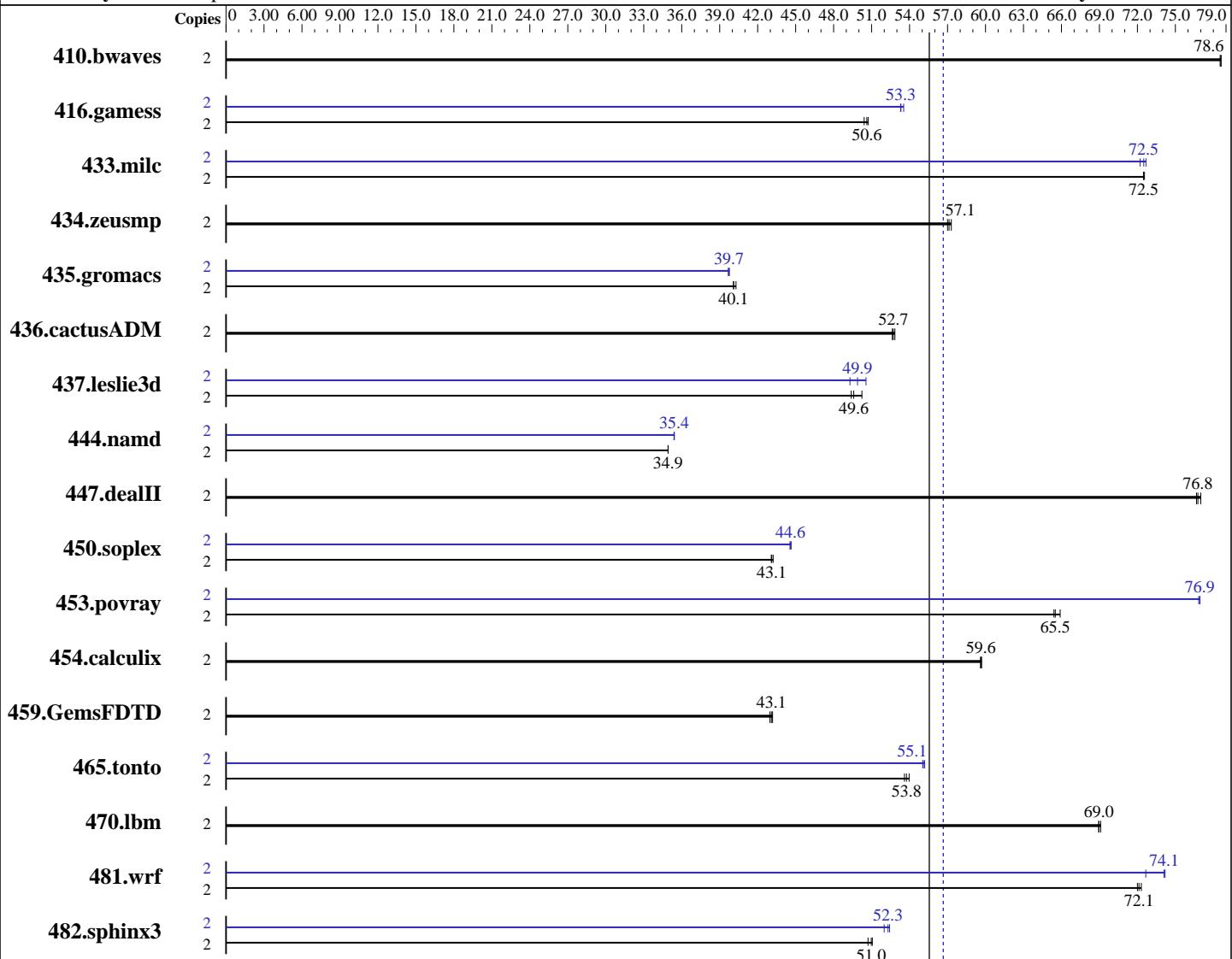$SPECfp\_rate\_base2006 = 55.6$

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Mar-2012
Hardware Availability: Apr-2011
Software Availability: Oct-2011

Copies	Benchmark	Result
2	410.bwaves	78.6
2 / 2	416.gamess	53.3 / 50.6
2 / 2	433.milc	72.5 / 72.5
2	434.zeusmp	57.1
2 / 2	435.gromacs	39.7 / 40.1
2	436.cactusADM	52.7
2 / 2	437.leslie3d	49.9 / 49.6
2 / 2	444.namd	35.4 / 34.9
2	447.dealII	76.8
2 / 2	450.soplex	44.6 / 43.1
2 / 2	453.povray	76.9 / 65.5
2	454.calculix	59.6
2	459.GemsFDTD	43.1
2 / 2	465.tonto	55.1 / 53.8
2	470.lbm	69.0
2 / 2	481.wrf	74.1 / 72.1
2 / 2	482.sphinx3	52.3 / 51.0

SPECfp_rate_base2006 = 55.6

SPECfp_rate2006 = 56.7

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

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server Release 6.1, Kernel 2.6.32-131.0.15.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)

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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)
Disk Subsystem:	1 x 1 TB SATA II, 7200 RPM
Other Hardware:	None

Base Pointers:	32/64-bit
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**	**78.6**	346	78.5	346	78.6	2	**346**	**78.6**	346	78.5	346	78.6
416.gamess	2	**774**	**50.6**	772	50.7	777	50.4	2	**734**	**53.3**	731	53.5	735	53.3
433.milc	2	253	72.6	**253**	**72.5**	253	72.5	2	253	72.7	254	72.2	**253**	**72.5**
434.zeusmp	2	**319**	**57.1**	319	57.0	318	57.3	2	**319**	**57.1**	319	57.0	318	57.3
435.gromacs	2	354	40.3	**356**	**40.1**	356	40.1	2	**359**	**39.7**	360	39.7	359	39.8
436.cactusADM	2	452	52.8	**453**	**52.7**	454	52.6	2	452	52.8	**453**	**52.7**	454	52.6
437.leslie3d	2	381	49.4	**379**	**49.6**	374	50.2	2	372	50.6	381	49.3	**377**	**49.9**
444.namd	2	**459**	**34.9**	459	34.9	459	34.9	2	453	35.4	453	35.4	**453**	**35.4**
447.dealII	2	298	76.7	297	77.0	**298**	**76.8**	2	298	76.7	297	77.0	**298**	**76.8**
450.soplex	2	386	43.2	387	43.1	**387**	**43.1**	2	374	44.6	**374**	**44.6**	374	44.6
453.povray	2	163	65.4	161	65.9	**162**	**65.5**	2	**138**	**76.9**	138	76.9	138	76.8
454.calculix	2	**277**	**59.6**	276	59.7	277	59.6	2	**277**	**59.6**	276	59.7	277	59.6
459.GemsFDTD	2	494	43.0	**493**	**43.1**	491	43.2	2	494	43.0	**493**	**43.1**	491	43.2
465.tonto	2	365	54.0	367	53.6	**366**	**53.8**	2	**357**	**55.1**	357	55.2	358	55.0
470.lbm	2	399	68.9	398	69.1	**399**	**69.0**	2	399	68.9	398	69.1	**399**	**69.0**
481.wrf	2	310	72.0	309	72.3	**310**	**72.1**	2	301	74.2	**301**	**74.1**	307	72.7
482.sphinx3	2	769	50.7	763	51.1	**765**	**51.0**	2	750	52.0	**745**	**52.3**	744	52.4

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"

General Notes

    Environment variables set by runspec before the start of the run:
    LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"

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General Notes (Continued)

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages disabled with:
echo never  > /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.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 -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

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Base Optimization Flags (Continued)

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

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

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -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
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
```

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Peak Portability Flags (Continued)

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) -static -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- -static

434.zeusmp: basepeak = yes

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

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

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$SPECfp_rate2006 = $ 56.7

$SPECfp_rate_base2006 = $ 55.6

CPU2006 license: 001176		**Test date:**	Mar-2012
Test sponsor:	Supermicro	**Hardware Availability:**	Apr-2011
Tested by:	Supermicro	**Software Availability:**	Oct-2011

Peak Optimization Flags (Continued)

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 -static -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-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-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.xml

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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 04:48:40 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 9 May 2012.