SPEC® CFP2006 Result

Supermicro

SuperServer 5037MC-H8TRF (X9SCD-F single node, Intel Pentium G850)

$SPECfp®_rate2006 = $ 64.3

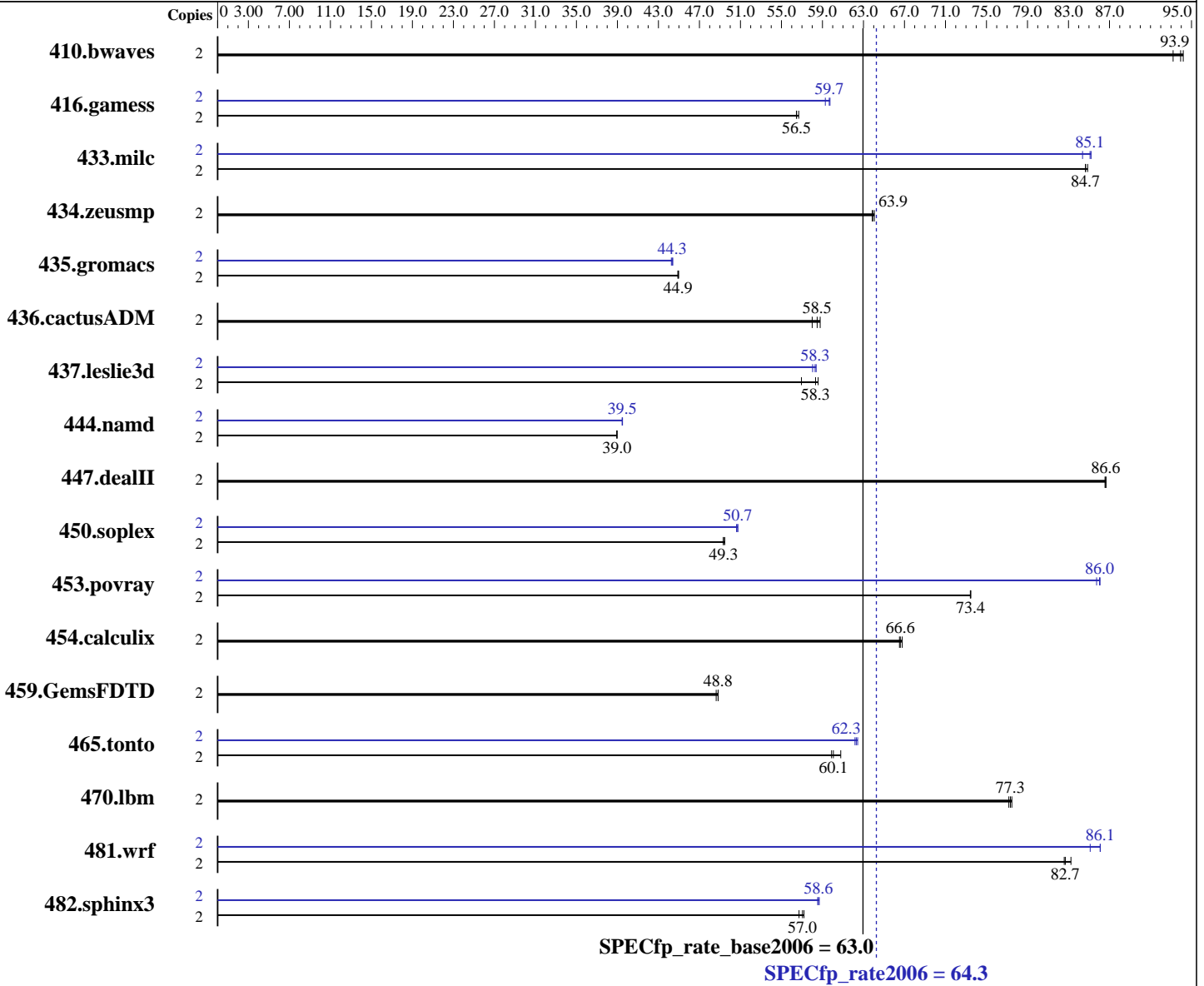$SPECfp_rate_base2006 = $ 63.0

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

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

Benchmark	Copies	Result
410.bwaves	2	93.9
416.gamess	2	59.7
416.gamess	2	56.5
433.milc	2	85.1
433.milc	2	84.7
434.zeusmp	2	63.9
435.gromacs	2	44.3
435.gromacs	2	44.9
436.cactusADM	2	58.5
437.leslie3d	2	58.3
437.leslie3d	2	58.3
444.namd	2	39.5
444.namd	2	39.0
447.dealII	2	86.6
450.soplex	2	50.7
450.soplex	2	49.3
453.povray	2	86.0
453.povray	2	73.4
454.calculix	2	66.6
459.GemsFDTD	2	48.8
465.tonto	2	62.3
465.tonto	2	60.1
470.lbm	2	77.3
481.wrf	2	86.1
481.wrf	2	82.7
482.sphinx3	2	58.6
482.sphinx3	2	57.0

SPECfp_rate_base2006 = 63.0

SPECfp_rate2006 = 64.3

Hardware

CPU Name:	Intel Pentium G850
CPU Characteristics:	
CPU MHz:	2900
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 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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CPU2006 license: 001176	**Test date:** Mar-2012
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L3 Cache:	3 MB I+D on chip per chip	Base Pointers:	32/64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC)	Other Software:	None
Disk Subsystem:	1 x 500 GB SATA III, 7200 RPM		
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	289	94.2	**289**	**93.9**	292	93.2	2	289	94.2	**289**	**93.9**	292	93.2
416.gamess	2	694	56.5	691	56.7	**693**	**56.5**	2	656	59.7	661	59.3	**656**	**59.7**
433.milc	2	**217**	**84.7**	216	84.9	217	84.7	2	**216**	**85.1**	215	85.2	218	84.4
434.zeusmp	2	**285**	**63.9**	285	63.9	284	64.1	2	**285**	**63.9**	285	63.9	284	64.1
435.gromacs	2	318	45.0	**318**	**44.9**	318	44.9	2	**322**	**44.3**	322	44.4	323	44.3
436.cactusADM	2	**409**	**58.5**	412	58.0	407	58.8	2	**409**	**58.5**	412	58.0	407	58.8
437.leslie3d	2	321	58.6	330	56.9	**322**	**58.3**	2	**323**	**58.3**	322	58.4	324	58.0
444.namd	2	412	38.9	412	39.0	**412**	**39.0**	2	406	39.5	**406**	**39.5**	406	39.5
447.dealII	2	**264**	**86.6**	264	86.7	264	86.6	2	**264**	**86.6**	264	86.7	264	86.6
450.soplex	2	337	49.5	338	49.3	**338**	**49.3**	2	330	50.6	**329**	**50.7**	329	50.7
453.povray	2	**145**	**73.4**	145	73.5	145	73.4	2	124	85.7	124	86.1	**124**	**86.0**
454.calculix	2	248	66.5	247	66.8	**248**	**66.6**	2	248	66.5	247	66.8	**248**	**66.6**
459.GemsFDTD	2	435	48.8	436	48.6	**435**	**48.8**	2	435	48.8	436	48.6	**435**	**48.8**
465.tonto	2	324	60.8	**328**	**60.1**	329	59.9	2	315	62.4	317	62.2	**316**	**62.3**
470.lbm	2	356	77.2	355	77.5	**355**	**77.3**	2	356	77.2	355	77.5	**355**	**77.3**
481.wrf	2	**270**	**82.7**	268	83.2	271	82.6	2	259	86.1	**259**	**86.1**	262	85.1
482.sphinx3	2	681	57.2	687	56.7	**683**	**57.0**	2	**665**	**58.6**	666	58.5	664	58.7

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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$SPECfp\_rate2006 = 64.3$

$SPECfp\_rate\_base2006 = 63.0$

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

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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SPEC CFP2006 Result
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Supermicro

SuperServer 5037MC-H8TRF (X9SCD-F single node,
Intel Pentium G850)

$SPECfp\_rate2006 = 64.3$

$SPECfp\_rate\_base2006 = 63.0$

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

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

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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$SPECfp\_rate2006 =$ 64.3

$SPECfp\_rate\_base2006 =$ 63.0

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

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

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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Intel Pentium G850)

$SPECfp\_rate2006 = \qquad 64.3$

$SPECfp\_rate\_base2006 = \quad 63.0$

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.

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