SPEC® CFP2006 Result

Supermicro

SuperServer 5018D-MTRF (X10SLM-F, Intel Xeon E3-1280 v3, 3.60 GHz)

$SPECfp^®\_rate2006 = \quad 151$

$SPECfp\_rate\_base2006 = \quad 146$

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

Test date: Jun-2013
Hardware Availability: Jun-2013
Software Availability: May-2013

SPECfp_rate_base2006 = 146

SPECfp_rate2006 = 151

	Hardware			Software	
CPU Name:	Intel Xeon E3-1280 v3		Operating System:	Red Hat Enterprise Linux Server release 6.4, Kernel 2.6.32-358.el6.x86_64	
CPU Characteristics:	Intel Turbo Boost Technology up to 4.00 GHz		Compiler:	C/C++: Version 13.1.1.163 of Intel C++ Studio XE for Linux;	
CPU MHz:	3600			Fortran: Version 13.1.1.163 of Intel Fortran Studio XE for Linux	
FPU:	Integrated				
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core				
CPU(s) orderable:	1 chip		Auto Parallel:	No	
Primary Cache:	32 KB I + 32 KB D on chip per core		File System:	ext4	
Secondary Cache:	256 KB I+D on chip per core		System State:	Run level 3 (multi-user)	

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$SPECfp\_rate2006 =$ 151
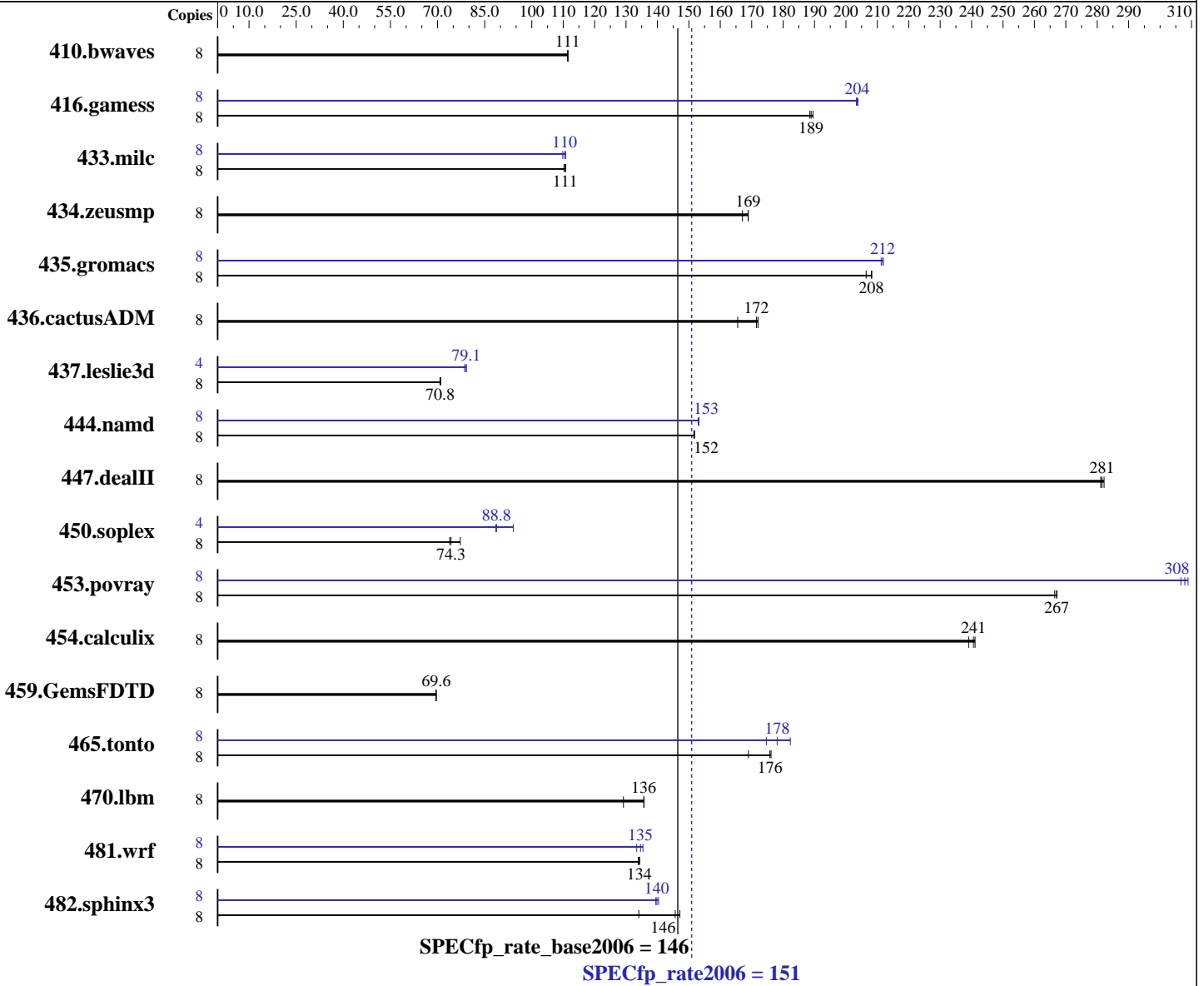
$SPECfp\_rate\_base2006 =$ 146

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L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	32 GB (4 x 8 GB 2Rx4 PC3-12800E-11, ECC)
Disk Subsystem:	1 x 2000 GB SATA II, 7200 RPM
Other Hardware:	None

Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	975	111	975	111	**975**	**111**	8	975	111	975	111	**975**	**111**
416.gamess	8	831	189	827	190	**829**	**189**	8	770	203	769	204	**769**	**204**
433.milc	8	663	111	**664**	**111**	666	110	8	**665**	**110**	668	110	663	111
434.zeusmp	8	436	167	431	169	**431**	**169**	8	436	167	431	169	**431**	**169**
435.gromacs	8	274	208	277	206	**274**	**208**	8	**270**	**212**	270	212	270	211
436.cactusADM	8	556	172	578	166	**557**	**172**	8	556	172	578	166	**557**	**172**
437.leslie3d	8	1063	70.8	1059	71.0	**1062**	**70.8**	4	475	79.2	**475**	**79.1**	478	78.6
444.namd	8	423	152	**423**	**152**	423	152	8	419	153	419	153	**419**	**153**
447.dealII	8	324	282	**325**	**281**	326	281	8	324	282	**325**	**281**	326	281
450.soplex	8	**898**	**74.3**	903	73.9	864	77.2	4	**376**	**88.8**	355	94.1	377	88.6
453.povray	8	**159**	**267**	159	267	160	266	8	**138**	**308**	138	309	139	307
454.calculix	8	274	241	276	239	**274**	**241**	8	274	241	276	239	**274**	**241**
459.GemsFDTD	8	1221	69.5	1220	69.6	**1220**	**69.6**	8	1221	69.5	1220	69.6	**1220**	**69.6**
465.tonto	8	447	176	**448**	**176**	466	169	8	432	182	451	175	**442**	**178**
470.lbm	8	851	129	810	136	**810**	**136**	8	851	129	810	136	**810**	**136**
481.wrf	8	665	134	667	134	**666**	**134**	8	660	135	670	133	**664**	**135**
482.sphinx3	8	**1070**	**146**	1163	134	1060	147	8	**1115**	**140**	1111	140	1118	139

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:/usr/cpu2006/sh"

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CPU2006 license: 001176	**Test date:**	Jun-2013
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Tested by: Supermicro	**Software Availability:**	May-2013

General Notes (Continued)

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /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:
    -xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3

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Test sponsor:	Supermicro	**Hardware Availability:**	Jun-2013
Tested by:	Supermicro	**Software Availability:**	May-2013

Base Optimization Flags (Continued)

C++ benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -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: `-xCORE-AVX2(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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3`
`-unroll2`

C++ benchmarks:

444.namd: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch`

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Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -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/Supermicro-Platform-Settings-V1.2-revB.20130719.html
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130702.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.xml
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130702.xml

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

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