SPEC® CFP2006 Result
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Supermicro

$SPECfp^{®}\_rate2006 = \quad 583$

Supermicro Processor Blade SBI-7127R-SH
(B9DRP, Intel Xeon E5-2660 v2)

$SPECfp\_rate\_base2006 = \quad 571$
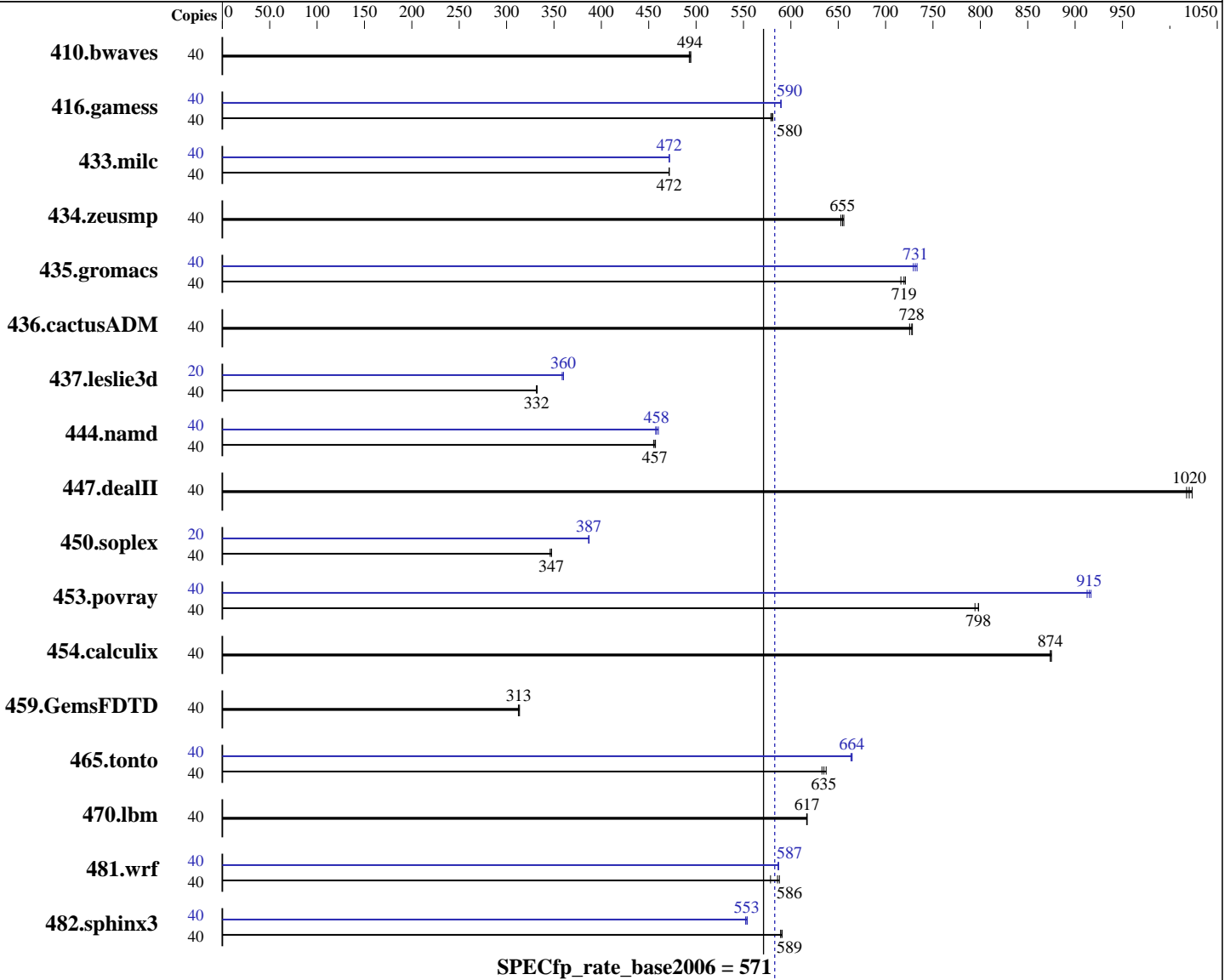
CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Dec-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013

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Hardware

CPU Name: Intel Xeon E5-2660 v2
CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable: 1,2 chips
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 6.4, Kernel 2.6.32-358.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
System State: Run level 3 (multi-user)
Continued on next page

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L3 Cache:	25 MB I+D on chip per chip	Base Pointers:	32/64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)	Other Software:	None
Disk Subsystem:	1 x 400 GB SSD		
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	40	1099	494	**1101**	**494**	1103	493	40	1099	494	**1101**	**494**	1103	493
416.gamess	40	1348	581	**1351**	**580**	1353	579	40	1329	589	1328	590	**1328**	**590**
433.milc	40	779	471	**779**	**472**	779	472	40	778	472	779	472	**778**	**472**
434.zeusmp	40	558	653	555	656	**556**	**655**	40	558	653	555	656	**556**	**655**
435.gromacs	40	399	716	396	721	**397**	**719**	40	**391**	**731**	389	733	392	729
436.cactusADM	40	**657**	**728**	656	728	659	725	40	**657**	**728**	656	728	659	725
437.leslie3d	40	**1134**	**332**	1131	332	1134	332	20	**522**	**360**	524	359	522	360
444.namd	40	702	457	**703**	**457**	705	455	40	**700**	**458**	697	460	701	457
447.dealII	40	447	1020	**448**	**1020**	450	1020	40	447	1020	**448**	**1020**	450	1020
450.soplex	40	964	346	**961**	**347**	960	347	20	**431**	**387**	431	387	431	387
453.povray	40	267	798	**267**	**798**	268	794	40	**233**	**915**	233	913	232	917
454.calculix	40	377	875	378	874	**378**	**874**	40	377	875	378	874	**378**	**874**
459.GemsFDTD	40	1353	314	**1356**	**313**	1358	312	40	1353	314	**1356**	**313**	1358	312
465.tonto	40	**620**	**635**	618	637	622	633	40	593	663	**592**	**664**	592	665
470.lbm	40	891	617	890	617	**891**	**617**	40	891	617	890	617	**891**	**617**
481.wrf	40	760	588	**763**	**586**	772	579	40	762	586	761	587	**761**	**587**
482.sphinx3	40	**1323**	**589**	1319	591	1323	589	40	1407	554	**1409**	**553**	1412	552

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"

Platform Notes

DDR Speed set to Force SPD in BIOS.

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General Notes

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

 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>
```

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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Test date: Dec-2013
Hardware Availability: Sep-2013
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Base Optimization Flags

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

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

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -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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Test sponsor: Supermicro	**Hardware Availability:** Sep-2013
Tested by: Supermicro	**Software Availability:** Sep-2013

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

C++ benchmarks:

```
     444.namd: -xAVX(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: -xAVX(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: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch
```

Continued on next page

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Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(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: -xAVX(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: -xAVX -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-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.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 21:34:35 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 11 March 2014.