SPEC® CFP2006 Result
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Supermicro

Supermicro Processor Blade SBI-7227R-T2
(B9DRT, Intel Xeon E5-2650L v2)

$SPECfp^{®}\_rate2006 = 463$

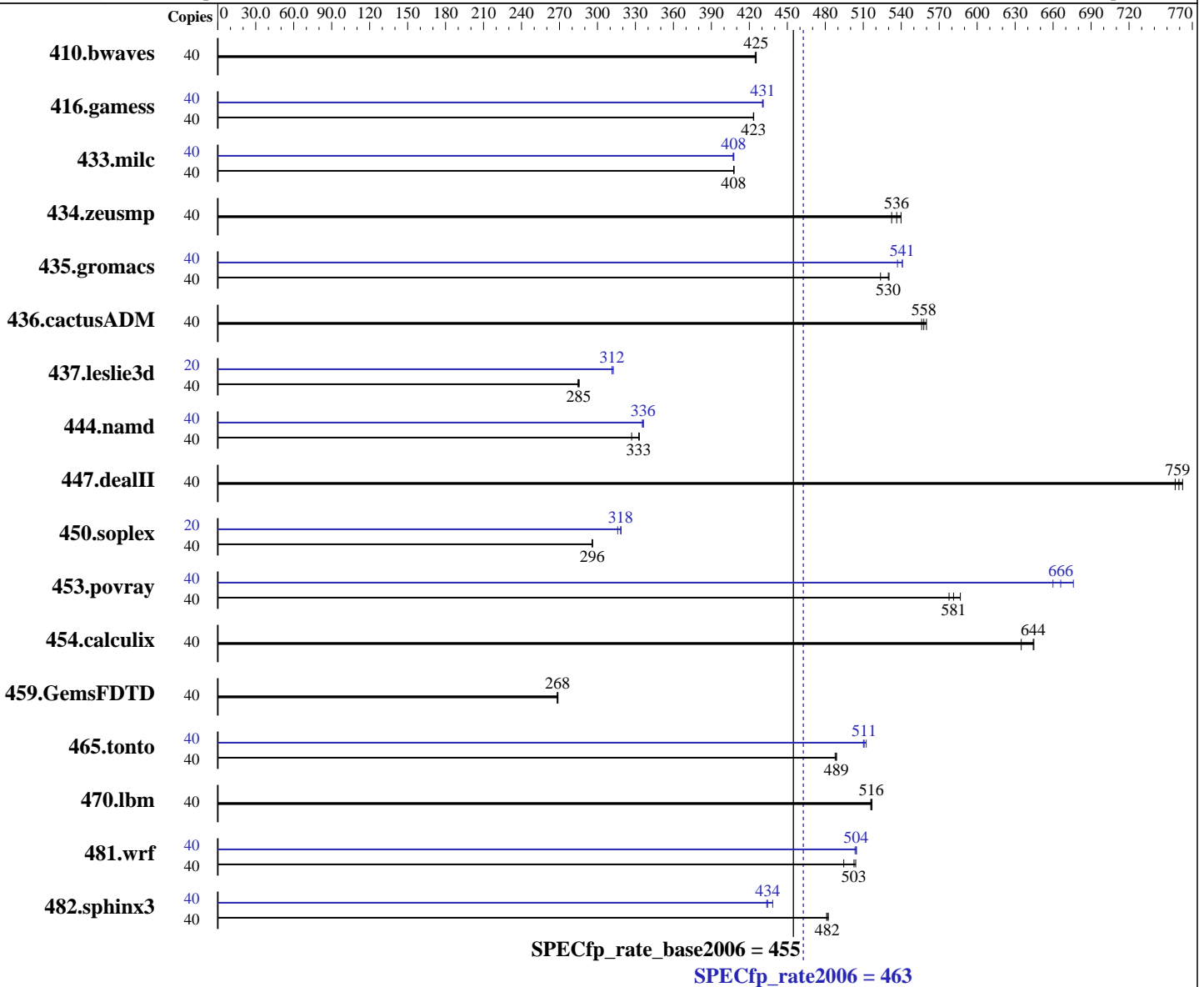$SPECfp\_rate\_base2006 = 455$

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jan-2014

Hardware Availability: Sep-2013

Software Availability: Sep-2013

Benchmark	Copies	Result
410.bwaves	40	425
416.gamess	40	431
416.gamess	40	423
433.milc	40	408
433.milc	40	408
434.zeusmp	40	536
435.gromacs	40	541
435.gromacs	40	530
436.cactusADM	40	558
437.leslie3d	20	312
437.leslie3d	40	285
444.namd	40	336
444.namd	40	333
447.dealII	40	759
450.soplex	20	318
450.soplex	40	296
453.povray	40	666
453.povray	40	581
454.calculix	40	644
459.GemsFDTD	40	268
465.tonto	40	511
465.tonto	40	489
470.lbm	40	516
481.wrf	40	504
481.wrf	40	503
482.sphinx3	40	434
482.sphinx3	40	482

SPECfp_rate_base2006 = 455

SPECfp_rate2006 = 463

Hardware

CPU Name: Intel Xeon E5-2650L v2

CPU Characteristics: Intel Turbo Boost Technology up to 2.10 GHz

CPU MHz: 1700

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)

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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:	128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz and CL11)	Other Software:	None
Disk Subsystem:	1 x 400 GB SSD		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	40	1280	425	**1278**	**425**	1278	425	40	1280	425	**1278**	**425**	1278	425
416.gamess	40	1849	423	1850	423	**1850**	**423**	40	1817	431	1820	430	**1818**	**431**
433.milc	40	900	408	**901**	**408**	901	408	40	900	408	**901**	**408**	902	407
434.zeusmp	40	684	532	674	540	**679**	**536**	40	684	532	674	540	**679**	**536**
435.gromacs	40	545	524	538	530	**539**	**530**	40	528	541	532	537	**528**	**541**
436.cactusADM	40	854	560	**857**	**558**	859	556	40	854	560	**857**	**558**	859	556
437.leslie3d	40	**1319**	**285**	1321	285	1317	286	20	604	311	**603**	**312**	602	313
444.namd	40	**965**	**333**	981	327	963	333	40	**955**	**336**	954	336	956	335
447.dealII	40	**603**	**759**	600	762	605	756	40	**603**	**759**	600	762	605	756
450.soplex	40	1126	296	1128	296	**1127**	**296**	20	523	319	528	316	**524**	**318**
453.povray	40	368	578	363	587	**366**	**581**	40	322	660	**320**	**666**	315	676
454.calculix	40	520	635	512	645	**512**	**644**	40	520	635	512	645	**512**	**644**
459.GemsFDTD	40	1583	268	1579	269	**1581**	**268**	40	1583	268	1579	269	**1581**	**268**
465.tonto	40	805	489	**805**	**489**	807	488	40	772	510	768	512	**771**	**511**
470.lbm	40	1065	516	1063	517	**1064**	**516**	40	1065	516	1063	517	**1064**	**516**
481.wrf	40	886	504	**889**	**503**	903	495	40	**886**	**504**	885	505	887	503
482.sphinx3	40	1616	482	1621	481	**1619**	**482**	40	1778	438	1797	434	**1794**	**434**

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"

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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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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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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
```

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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.

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