SPEC® CFP2006 Result
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Supermicro

Supermicro Processor Blade SBI-7227R-T2
(B9DRT, Intel Xeon E5-2660 v2)

$SPECfp^{®}\_rate2006 = 571$

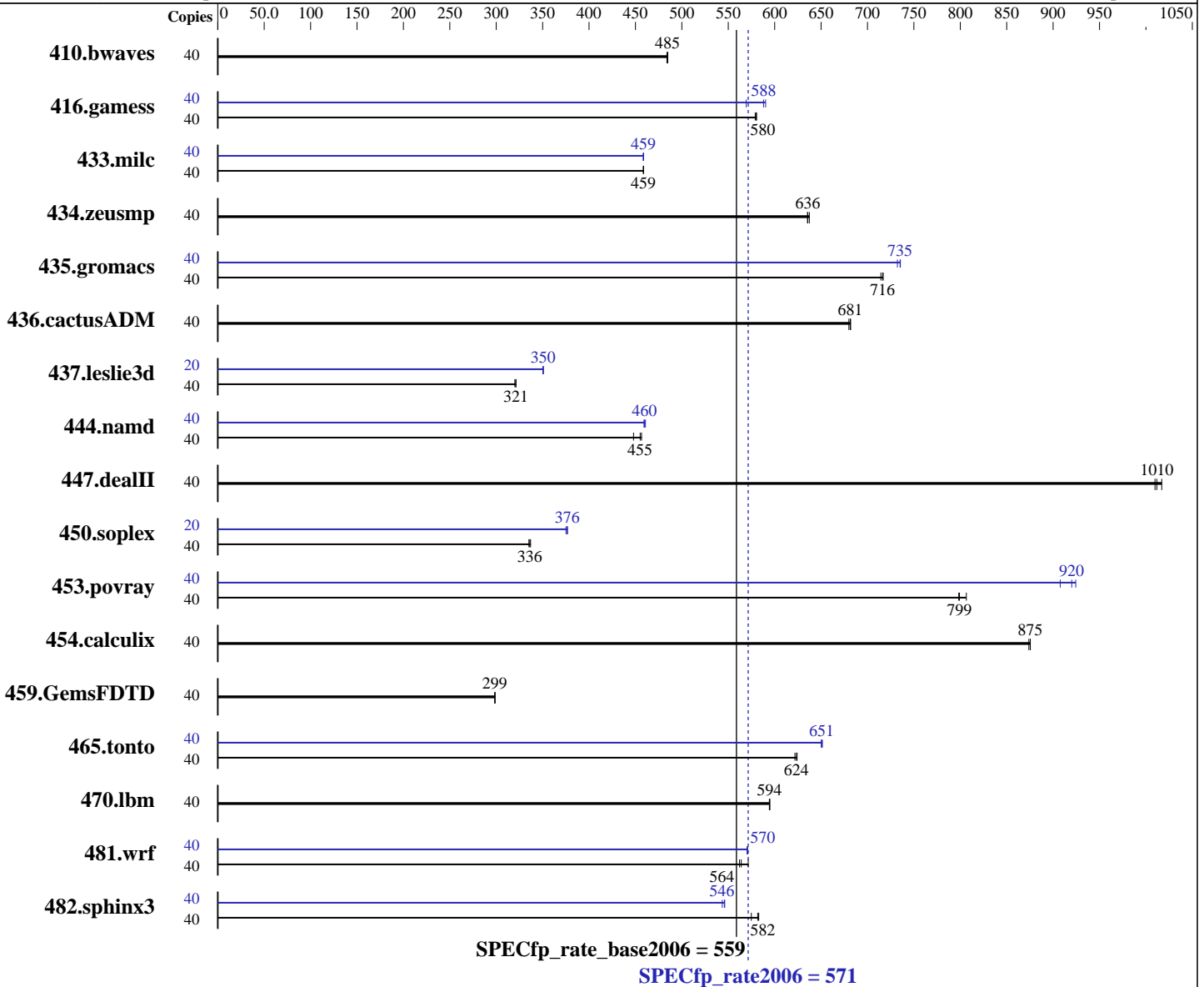$SPECfp\_rate\_base2006 = 559$

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	485
416.gamess	40	588
416.gamess	40	580
433.milc	40	459
433.milc	40	459
434.zeusmp	40	636
435.gromacs	40	735
435.gromacs	40	716
436.cactusADM	40	681
437.leslie3d	20	350
437.leslie3d	40	321
444.namd	40	460
444.namd	40	455
447.dealII	40	1010
450.soplex	20	376
450.soplex	40	336
453.povray	40	920
453.povray	40	799
454.calculix	40	875
459.GemsFDTD	40	299
465.tonto	40	651
465.tonto	40	624
470.lbm	40	594
481.wrf	40	570
481.wrf	40	564
482.sphinx3	40	546
482.sphinx3	40	582

SPECfp_rate_base2006 = 559

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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

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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
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	1 x 400 GB SSD
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	40	1121	485	1123	484	**1122**	**485**	40	1121	485	1123	484	**1122**	**485**
416.gamess	40	1349	580	1353	579	**1350**	**580**	40	1327	590	**1332**	**588**	1376	569
433.milc	40	800	459	801	459	**801**	**459**	40	800	459	**801**	**459**	801	458
434.zeusmp	40	571	637	**573**	**636**	573	635	40	571	637	**573**	**636**	573	635
435.gromacs	40	**399**	**716**	398	717	400	714	40	390	732	**389**	**735**	388	735
436.cactusADM	40	701	682	**701**	**681**	703	680	40	701	682	**701**	**681**	703	680
437.leslie3d	40	1170	321	**1171**	**321**	1175	320	20	536	351	**537**	**350**	537	350
444.namd	40	703	457	**705**	**455**	716	448	40	**698**	**460**	699	459	696	461
447.dealII	40	453	1010	450	1020	**452**	**1010**	40	453	1010	450	1020	**452**	**1010**
450.soplex	40	**992**	**336**	990	337	995	335	20	**443**	**376**	443	377	445	375
453.povray	40	264	807	267	798	**266**	**799**	40	234	908	**231**	**920**	230	924
454.calculix	40	377	875	378	874	**377**	**875**	40	377	875	378	874	**377**	**875**
459.GemsFDTD	40	1421	299	**1422**	**299**	1422	298	40	1421	299	**1422**	**299**	1422	298
465.tonto	40	631	624	633	622	**631**	**624**	40	**605**	**651**	604	651	605	650
470.lbm	40	925	594	924	595	**924**	**594**	40	925	594	924	595	**924**	**594**
481.wrf	40	782	571	**792**	**564**	795	562	40	783	571	**783**	**570**	783	570
482.sphinx3	40	**1340**	**582**	1338	583	1356	575	40	**1428**	**546**	1434	544	1427	546

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"

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"

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SPECfp_rate2006 =   571

SPECfp_rate_base2006 =   559

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

Test date: Jan-2014
Hardware Availability: Sep-2013
Software Availability: Sep-2013

General Notes (Continued)

```
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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CPU2006 license: 001176		**Test date:**	Jan-2014
Test sponsor:	Supermicro	**Hardware Availability:**	Sep-2013
Tested by:	Supermicro	**Software Availability:**	Sep-2013

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

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

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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

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

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