SPEC® CFP2006 Result
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Supermicro

Supermicro C7Q67 motherboard (Intel Core i7-2700K, 3.50 GHz)

$SPECfp^®\_rate2006 = 116$
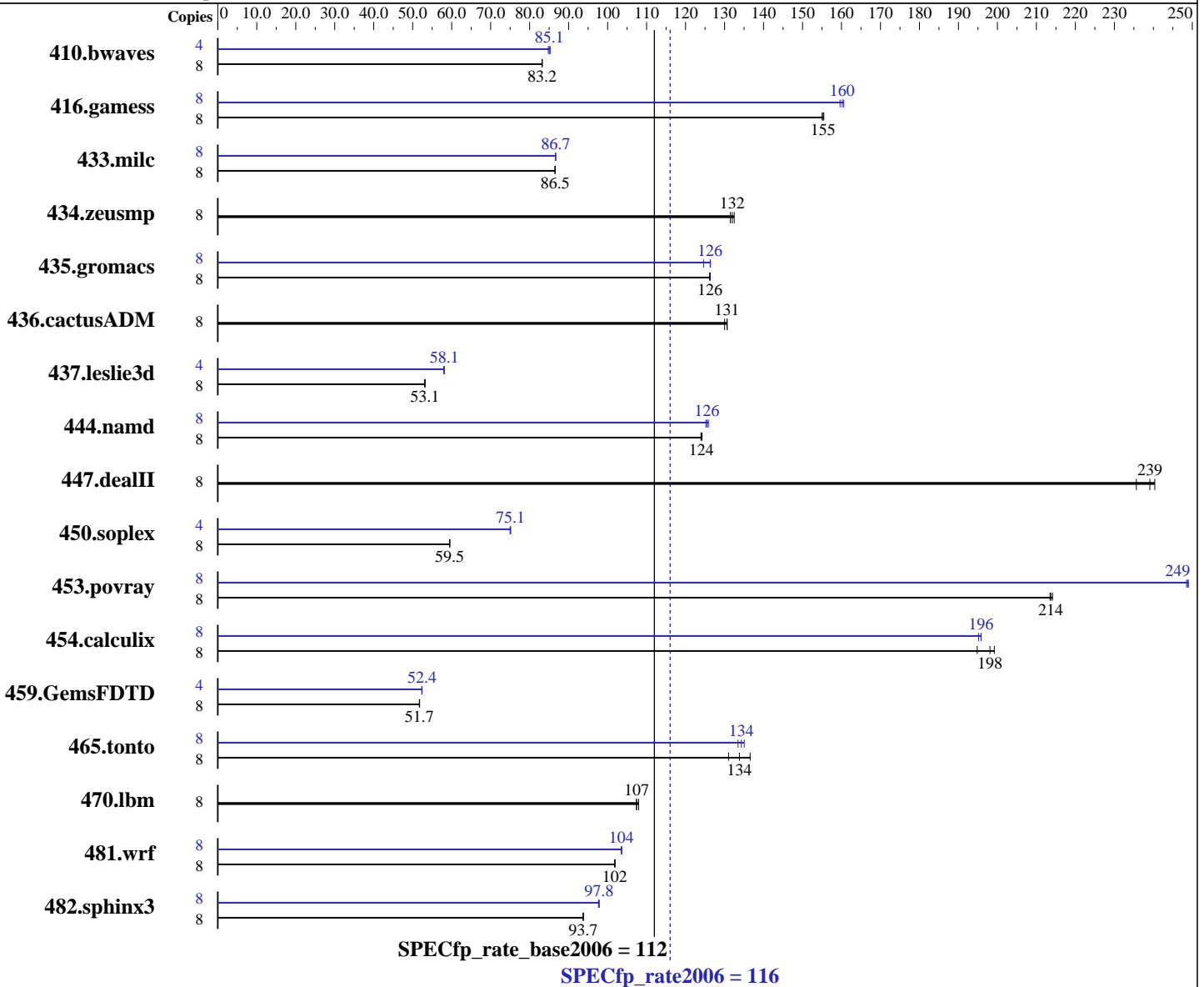
$SPECfp\_rate\_base2006 = 112$

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: May-2012

Hardware Availability: Oct-2011

Software Availability: Dec-2011

410.bwaves	4	85.1	
	8	83.2	
416.gamess	8	160	
	8	155	
433.milc	8	86.7	
	8	86.5	
434.zeusmp	8	132	
435.gromacs	8	126	
	8	126	
436.cactusADM	8	131	
437.leslie3d	4	58.1	
	8	53.1	
444.namd	8	126	
	8	124	
447.dealII	8	239	
450.soplex	4	75.1	
	8	59.5	
453.povray	8	249	
	8	214	
454.calculix	8	196	
	8	198	
459.GemsFDTD	4	52.4	
	8	51.7	
465.tonto	8	134	
	8	134	
470.lbm	8	107	
481.wrf	8	104	
	8	102	
482.sphinx3	8	97.8	
	8	93.7	

SPECfp_rate_base2006 = 112

SPECfp_rate2006 = 116

Hardware

CPU Name: Intel Core i7-2700K

CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz

CPU MHz: 3500

FPU: Integrated

CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core

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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.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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L3 Cache:	8 MB I+D on chip per chip	Base Pointers:	32/64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	16 GB (4 x 4 GB 2Rx8 PC3-12800E-11, ECC)	Other Software:	None
Disk Subsystem:	1 x 600 GB SATA II, 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	8	**1307**	**83.2**	1306	83.2	1307	83.2	4	**639**	**85.1**	641	84.8	637	85.3
416.gamess	8	**1009**	**155**	1008	155	1010	155	8	981	160	**978**	**160**	975	161
433.milc	8	849	86.5	849	86.5	**849**	**86.5**	8	847	86.7	**847**	**86.7**	848	86.6
434.zeusmp	8	550	132	**552**	**132**	554	131	8	550	132	**552**	**132**	554	131
435.gromacs	8	**452**	**126**	453	126	452	126	8	**452**	**126**	458	125	452	126
436.cactusADM	8	735	130	**732**	**131**	732	131	8	735	130	**732**	**131**	732	131
437.leslie3d	8	1414	53.2	1417	53.1	**1416**	**53.1**	4	647	58.1	**647**	**58.1**	648	58.0
444.namd	8	518	124	**517**	**124**	516	124	8	**511**	**126**	512	125	510	126
447.dealII	8	**383**	**239**	381	240	388	236	8	**383**	**239**	381	240	388	236
450.soplex	8	1122	59.5	**1121**	**59.5**	1121	59.5	4	444	75.1	445	75.0	**444**	**75.1**
453.povray	8	**199**	**214**	199	214	199	213	8	171	249	**171**	**249**	171	249
454.calculix	8	339	195	331	199	**333**	**198**	8	**337**	**196**	338	195	337	196
459.GemsFDTD	8	1639	51.8	1641	51.7	**1640**	**51.7**	4	810	52.4	811	52.3	**810**	**52.4**
465.tonto	8	601	131	576	137	**588**	**134**	8	590	133	**586**	**134**	583	135
470.lbm	8	1018	108	**1023**	**107**	1023	107	8	1018	108	**1023**	**107**	1023	107
481.wrf	8	878	102	877	102	**878**	**102**	8	**863**	**104**	862	104	863	103
482.sphinx3	8	1664	93.7	**1664**	**93.7**	1662	93.8	8	**1594**	**97.8**	1597	97.7	1593	97.9

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"
Transparent Huge Pages disabled with:
echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled

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Platform Notes

```
As tested, the system used a Supermicro CSE-731i-300B chassis.
The chassis is configured with a PWS-303-PQ power supply, 1 SNK-P0046A4 heatsink,
as well as 1 FAN-0108L4 rear cooling fan and 1 FAN-0113L4 front intake fan.
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RHEL5.5
```

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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Tested by: Supermicro

Test date: May-2012
Hardware Availability: Oct-2011
Software Availability: Dec-2011

Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias
```

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

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias
```

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:**	Dec-2011

Peak Portability Flags (Continued)

```
454.calculix: -DSPEC_CPU_LP64 -nofor_main
   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) -prof-use(pass 2) -static -auto-ilp32

 470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2
```

C++ benchmarks:

```
444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
          -no-prec-div(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) -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) -prof-use(pass 2) -unroll4 -ansi-alias
```

Fortran benchmarks:

```
410.bwaves: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -static

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- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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
```

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$SPECfp\_rate\_base2006 =$ 112

CPU2006 license:	001176	**Test date:**	May-2012
Test sponsor:	Supermicro	**Hardware Availability:**	Oct-2011
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Peak Optimization Flags (Continued)

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) -prof-use(pass 2) -opt-prefetch
                 -static -auto-ilp32

    436.cactusADM: basepeak = yes

    454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32

    481.wrf: Same as 454.calculix

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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