SPEC® CFP2006 Result
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Supermicro

Supermicro C7P67 motherboard (Intel Core i7-2700K, 3.50 GHz)

$SPECfp®_rate2006 = $ 128

$SPECfp_rate_base2006 = $ 123

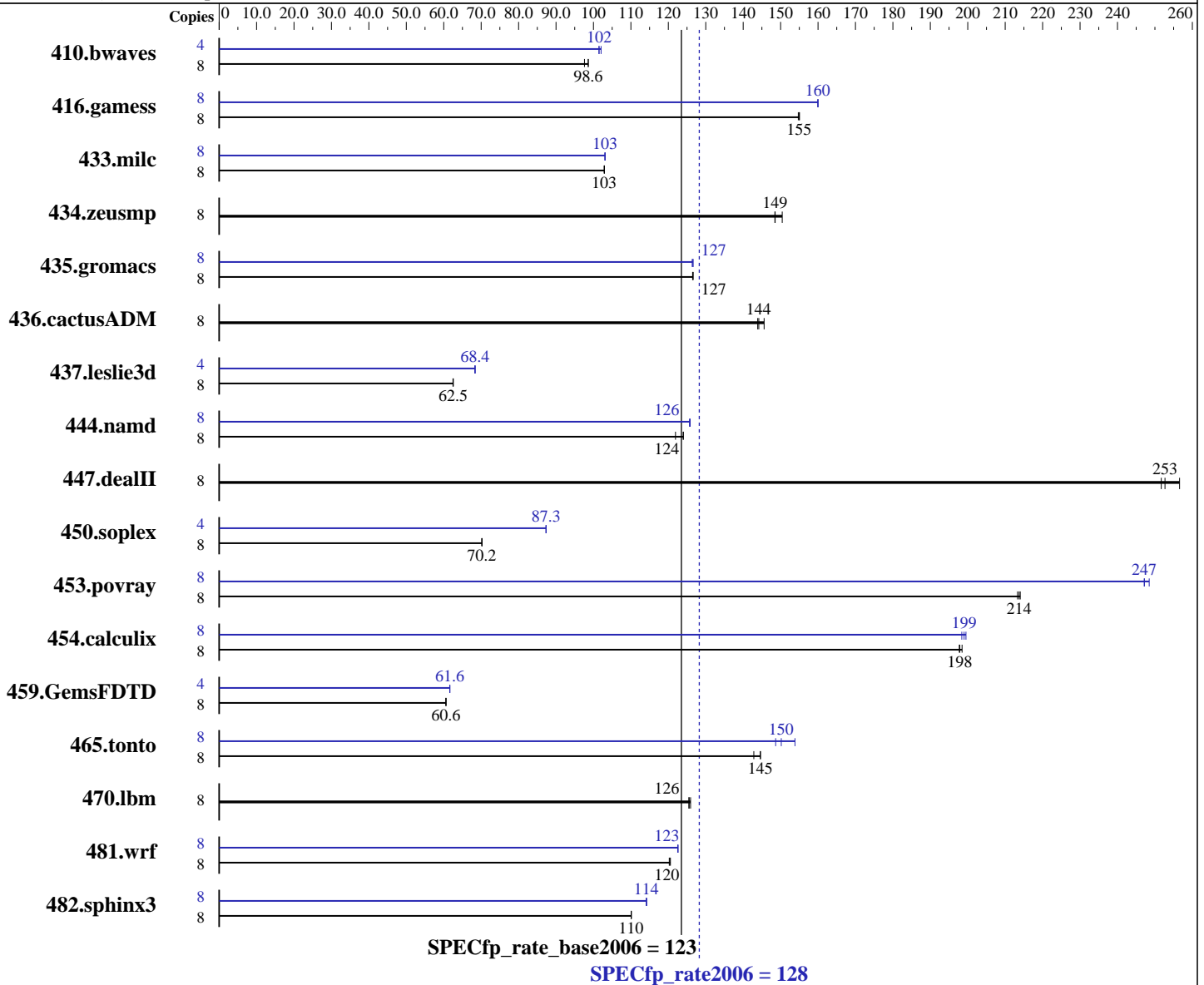|	
CPU2006 license: 001176	**Test date:** May-2012
Test sponsor: Supermicro	**Hardware Availability:** Oct-2011
Tested by: Supermicro	**Software Availability:** Dec-2011

410.bwaves — Copies 4: 102, 8: 98.6
416.gamess — Copies 8: 160, 8: 155
433.milc — Copies 8: 103, 8: 103
434.zeusmp — Copies 8: 149
435.gromacs — Copies 8: 127, 8: 127
436.cactusADM — Copies 8: 144
437.leslie3d — Copies 4: 68.4, 8: 62.5
444.namd — Copies 8: 126, 8: 124
447.dealII — Copies 8: 253
450.soplex — Copies 4: 87.3, 8: 70.2
453.povray — Copies 8: 247, 8: 214
454.calculix — Copies 8: 199, 8: 198
459.GemsFDTD — Copies 4: 61.6, 8: 60.6
465.tonto — Copies 8: 150, 8: 145
470.lbm — Copies 8: 126
481.wrf — Copies 8: 123, 8: 120
482.sphinx3 — Copies 8: 114, 8: 110

SPECfp_rate_base2006 = 123

SPECfp_rate2006 = 128

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)

Continued on next page

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L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	8 GB (4 x 2 GB 2Rx8 PC3-12800U-11)
Disk Subsystem:	1 x 120 GB OCZ SSD
Other Hardware:	None

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

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1114	97.6	1102	98.6	**1103**	**98.6**	4	**536**	**102**	536	101	533	102
416.gamess	8	1012	155	**1011**	**155**	1010	155	8	979	160	979	160	**979**	**160**
433.milc	8	713	103	**714**	**103**	714	103	8	712	103	713	103	**712**	**103**
434.zeusmp	8	**490**	**149**	490	148	484	150	8	**490**	**149**	490	148	484	150
435.gromacs	8	451	127	**451**	**127**	452	126	8	451	127	**451**	**127**	452	126
436.cactusADM	8	664	144	**663**	**144**	657	146	8	664	144	**663**	**144**	657	146
437.leslie3d	8	**1203**	**62.5**	1204	62.5	1202	62.6	4	550	68.4	550	68.3	**550**	**68.4**
444.namd	8	526	122	**518**	**124**	517	124	8	511	126	510	126	**510**	**126**
447.dealII	8	**362**	**253**	357	257	364	252	8	**362**	**253**	357	257	364	252
450.soplex	8	951	70.2	**950**	**70.2**	950	70.3	4	**382**	**87.3**	382	87.4	382	87.3
453.povray	8	**199**	**214**	199	214	200	213	8	171	248	**172**	**247**	172	247
454.calculix	8	**334**	**198**	334	198	333	198	8	333	198	331	200	**332**	**199**
459.GemsFDTD	8	**1401**	**60.6**	1401	60.6	1401	60.6	4	689	61.6	**689**	**61.6**	689	61.6
465.tonto	8	**544**	**145**	544	145	551	143	8	529	149	512	154	**524**	**150**
470.lbm	8	873	126	876	125	**875**	**126**	8	873	126	876	125	**875**	**126**
481.wrf	8	743	120	741	121	**742**	**120**	8	729	123	**729**	**123**	729	123
482.sphinx3	8	**1416**	**110**	1416	110	1417	110	8	1365	114	**1366**	**114**	1367	114

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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CPU2006 license:	001176	**Test date:**	May-2012
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Platform Notes

```
As tested, the system used a Supermicro CSE-732D2-500B chassis.
The chassis is configured with a PWS-502-PQ power supply, 1 SNK-P0046A4 heatsink,
as well as 1 FAN-0124L4 front cooling fan and 1 FAN-0124L4 rear exhaust fan.
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/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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CPU2006 license: 001176
Test sponsor: Supermicro
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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CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: May-2012

Hardware Availability: Oct-2011

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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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

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