SPEC® CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Supermicro

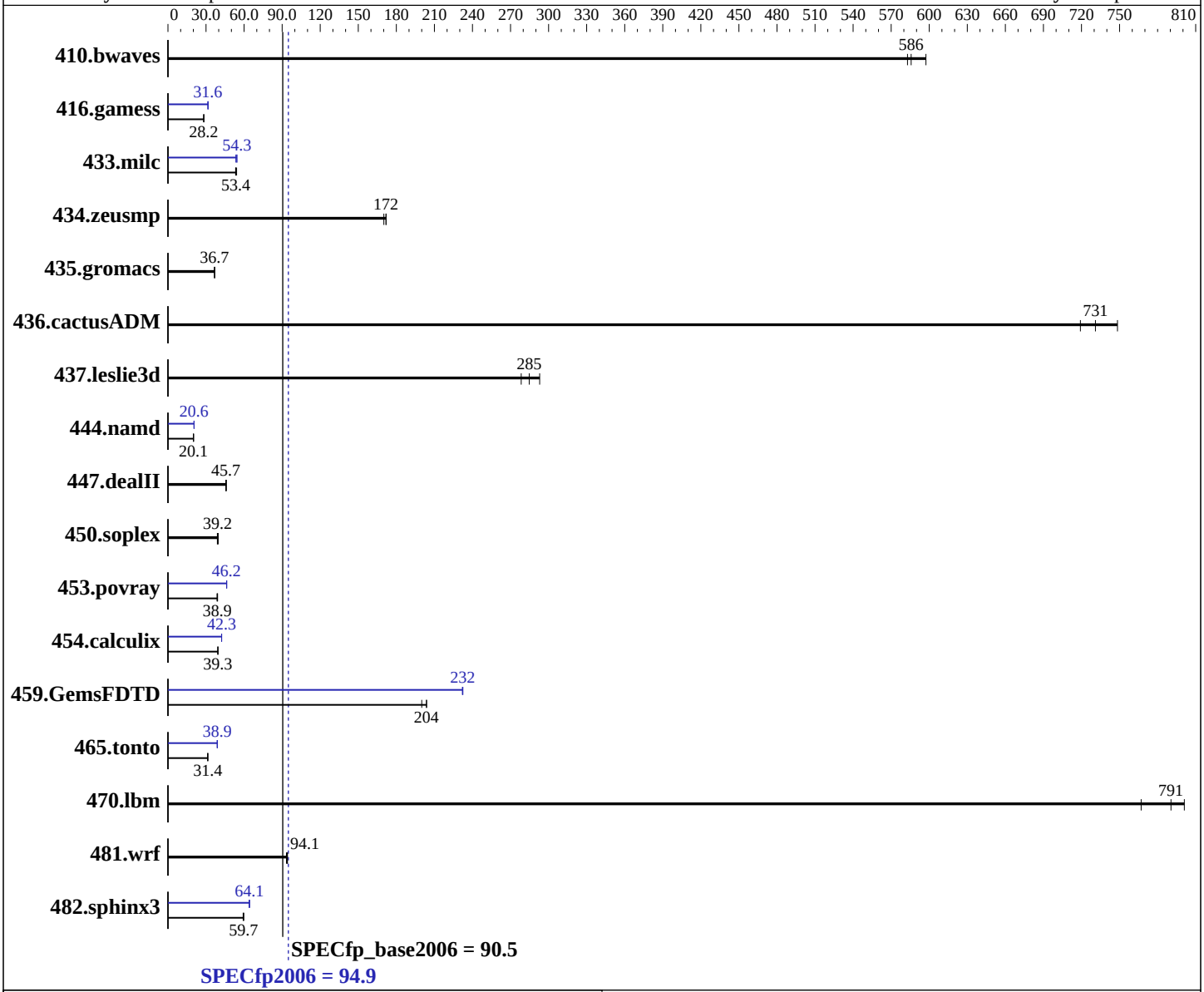
SuperServer 2028UT-BTNRT
(X10DBT-T , Intel Xeon E7-2870 v2)

SPECfp®2006 = 94.9

SPECfp_base2006 = 90.5

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

Test date: Dec-2014
Hardware Availability: Oct-2014
Software Availability: Sep-2014



Hardware

CPU Name:	Intel Xeon E7-2870 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz:	2300
FPU:	Integrated
CPU(s) enabled:	30 cores, 2 chips, 15 cores/chip
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 7.0, Kernel 3.10.0-123.el7.x86_64
Compiler:	C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux; Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Supermicro

SuperServer 2028UT-BTNRT
(X10DBT-T , Intel Xeon E7-2870 v2)

SPECfp2006 = 94.9

SPECfp_base2006 = 90.5

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

Test date: Dec-2014
Hardware Availability: Oct-2014
Software Availability: Sep-2014

L3 Cache: 30 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (32 x 8 GB 2Rx8 PC3-14900R-13, ECC, running at 1333 MHz)
Disk Subsystem: 1 x 400 GB SATA III, 7200 RPM
Other Hardware: None

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	23.3	583	22.7	597	**23.2**	**586**	23.3	583	22.7	597	**23.2**	**586**
416.gamess	693	28.2	**694**	**28.2**	694	28.2	620	31.6	**620**	**31.6**	621	31.5
433.milc	172	53.3	**172**	**53.4**	170	54.1	169	54.3	**169**	**54.3**	172	53.5
434.zeusmp	52.9	172	53.5	170	**53.0**	**172**	52.9	172	53.5	170	**53.0**	**172**
435.gromacs	194	36.8	**194**	**36.7**	194	36.7	194	36.8	**194**	**36.7**	194	36.7
436.cactusADM	16.0	748	**16.3**	**731**	16.6	719	16.0	748	**16.3**	**731**	16.6	719
437.leslie3d	33.8	278	32.1	293	**33.0**	**285**	33.8	278	32.1	293	**33.0**	**285**
444.namd	**398**	**20.1**	398	20.1	399	20.1	390	20.6	**390**	**20.6**	390	20.6
447.dealII	250	45.7	**250**	**45.7**	249	46.0	250	45.7	**250**	**45.7**	249	46.0
450.soplex	211	39.6	214	38.9	**213**	**39.2**	211	39.6	214	38.9	**213**	**39.2**
453.povray	136	39.1	**137**	**38.9**	137	38.7	115	46.2	115	46.4	**115**	**46.2**
454.calculix	210	39.3	**210**	**39.3**	209	39.4	195	42.2	195	42.3	**195**	**42.3**
459.GemsFDTD	52.0	204	53.0	200	**52.1**	**204**	**45.7**	**232**	45.6	232	45.7	232
465.tonto	313	31.5	315	31.2	**313**	**31.4**	**253**	**38.9**	254	38.7	252	39.0
470.lbm	17.9	767	**17.4**	**791**	17.2	801	17.9	767	**17.4**	**791**	17.2	801
481.wrf	120	93.4	**119**	**94.1**	119	94.2	120	93.4	**119**	**94.1**	119	94.2
482.sphinx3	327	59.7	**327**	**59.7**	329	59.3	303	64.4	**304**	**64.1**	305	64.0

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
BIOS Settings:
Hyper-Threading = Disable
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/home/SPEC2K6/SPEC2006-V12/libs/32:/home/SPEC2K6/SPEC2006-V12/libs/64:/home/SPEC2K6/SPEC2006-V12/sh"
```

Continued on next page

General Notes (Continued)

```
OMP_NUM_THREADS = "30"

 Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
 memory using RedHat EL 7.0
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

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

Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias
```

Continued on next page

Base Optimization Flags (Continued)

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

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

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

Peak Compiler Invocation

C benchmarks:
`icc -m64`

C++ benchmarks:
`icpc -m64`

Fortran benchmarks:
`ifort -m64`

Benchmarks using both Fortran and C:
`icc -m64 ifort -m64`

Peak Portability Flags

Same as Base Portability Flags

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) `-auto-ilp32` `-ansi-alias`

470.lbm: `basepeak = yes`

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

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`

Continued on next page

Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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: 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: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

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

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 Tue Jan 13 10:54:56 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 January 2015.