SPEC® CFP2006 Result

Supermicro

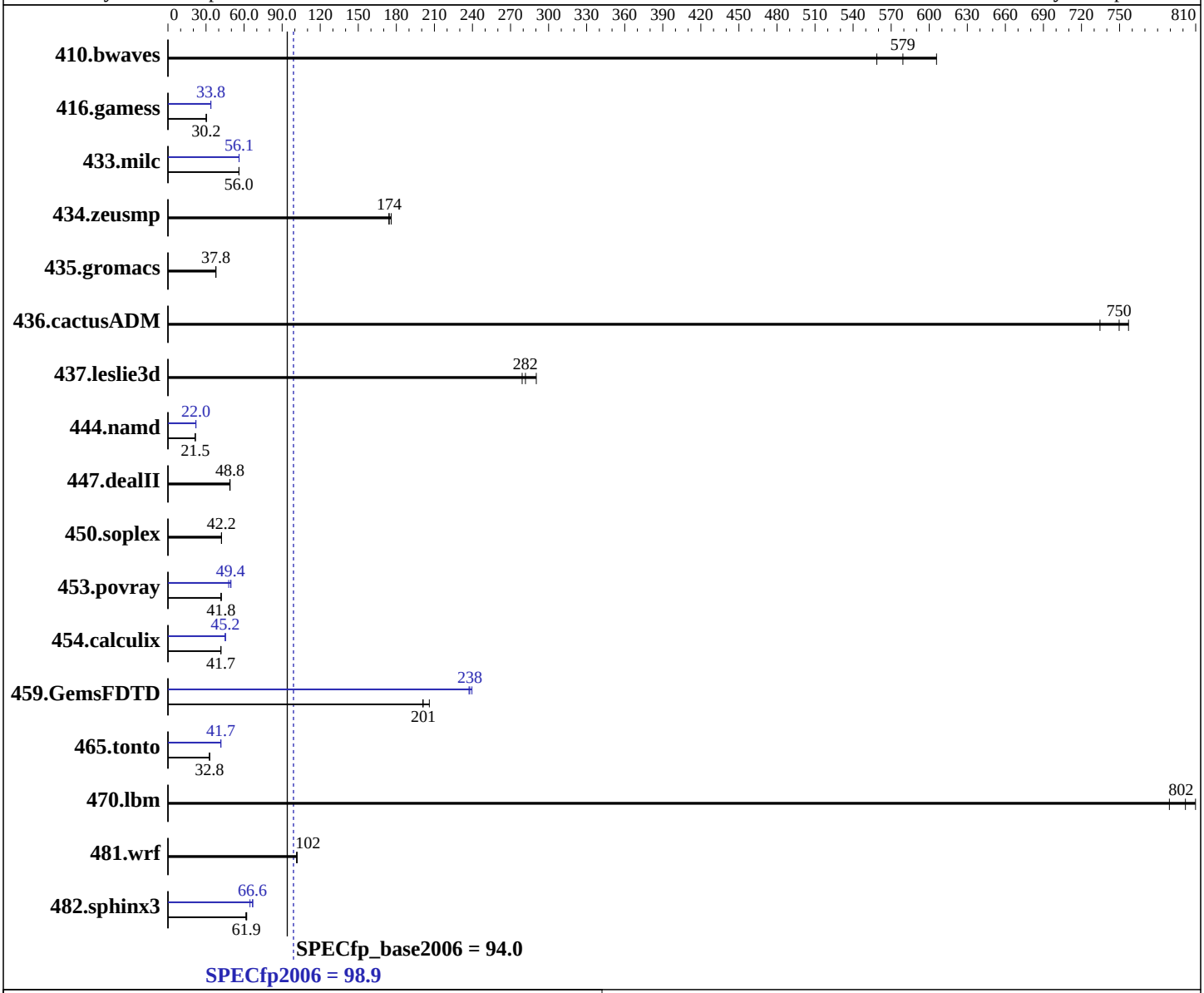
SuperServer 2028UT-BTNRT
(X10DBT-T , Intel Xeon E7-2880 v2)

SPECfp®2006 = 98.9

SPECfp_base2006 = 94.0

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 E7-2880 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz:	2500
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

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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)

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L3 Cache: 37.5 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	24.3	559	**23.5**	**579**	22.4	606	24.3	559	**23.5**	**579**	22.4	606
416.gamess	647	30.3	**648**	**30.2**	648	30.2	579	33.8	**579**	**33.8**	579	33.8
433.milc	**164**	**56.0**	164	56.0	164	56.0	164	56.1	164	56.0	**164**	**56.1**
434.zeusmp	**52.2**	**174**	51.7	176	52.3	174	**52.2**	**174**	51.7	176	52.3	174
435.gromacs	189	37.8	**189**	**37.8**	189	37.7	189	37.8	**189**	**37.8**	189	37.7
436.cactusADM	16.3	735	**15.9**	**750**	15.8	757	16.3	735	**15.9**	**750**	15.8	757
437.leslie3d	33.7	279	32.4	290	**33.4**	**282**	33.7	279	32.4	290	**33.4**	**282**
444.namd	372	21.5	**373**	**21.5**	373	21.5	364	22.0	365	22.0	**365**	**22.0**
447.dealII	**234**	**48.8**	235	48.7	233	49.0	**234**	**48.8**	235	48.7	233	49.0
450.soplex	**198**	**42.2**	197	42.3	198	42.2	**198**	**42.2**	197	42.3	198	42.2
453.povray	**127**	**41.8**	127	41.7	126	42.1	107	49.7	111	47.8	**108**	**49.4**
454.calculix	198	41.7	**198**	**41.7**	198	41.7	182	45.3	**182**	**45.2**	183	45.2
459.GemsFDTD	**52.7**	**201**	51.5	206	52.8	201	**44.6**	**238**	44.3	240	44.7	237
465.tonto	**300**	**32.8**	301	32.6	299	32.9	**236**	**41.7**	236	41.7	236	41.7
470.lbm	17.4	789	**17.1**	**802**	17.0	810	17.4	789	**17.1**	**802**	17.0	810
481.wrf	**110**	**102**	110	101	110	102	**110**	**102**	110	101	110	102
482.sphinx3	317	61.4	314	62.1	**315**	**61.9**	291	66.9	302	64.6	**292**	**66.6**

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"
```

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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
```

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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`

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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

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

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