SPEC® CFP2006 Result
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Supermicro

Supermicro SuperServer 6017R-72RFTP
(X9DRW-7TPF , Intel Xeon E5-2697 v2)

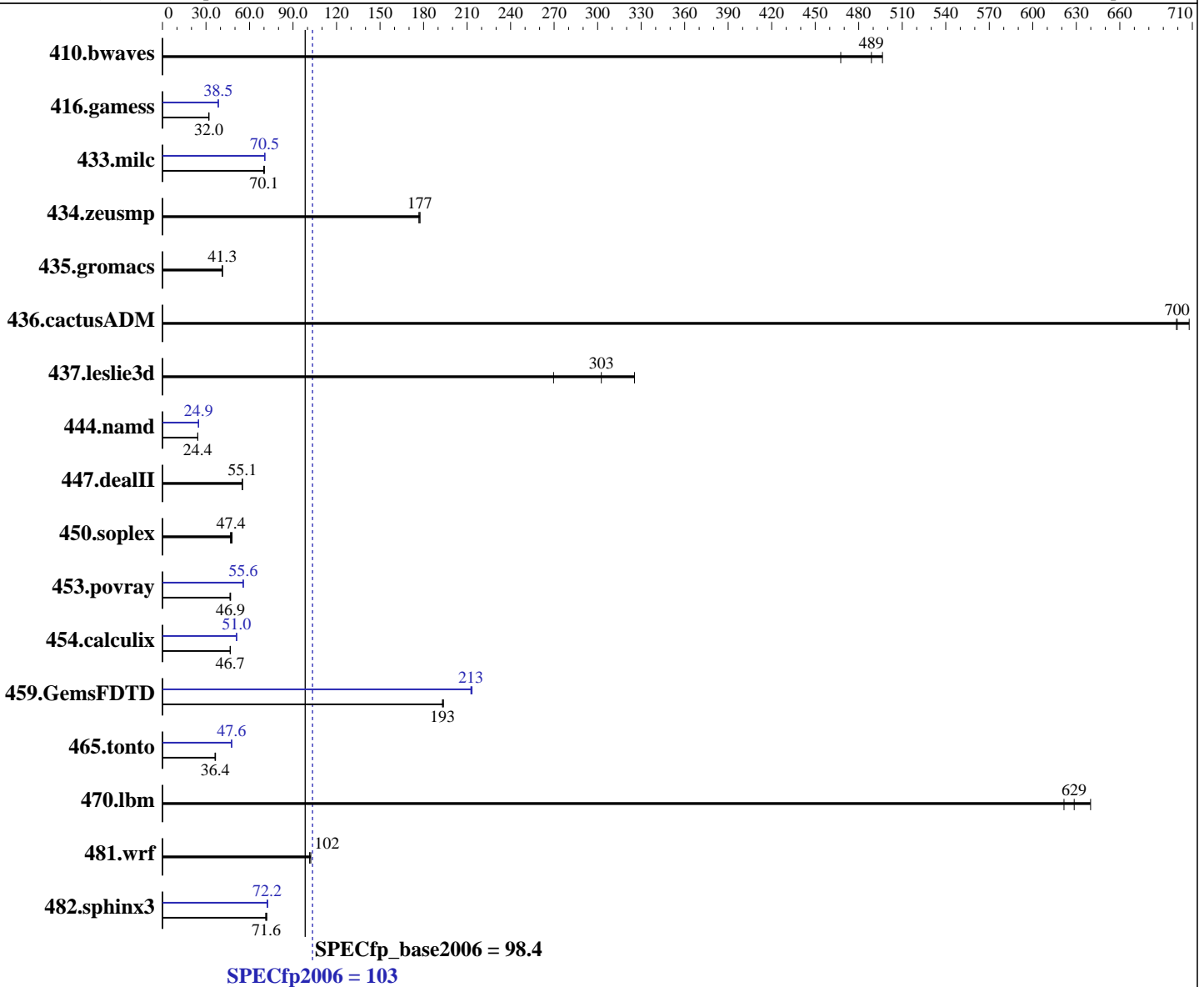$SPECfp^{®}2006 =$ 103

$SPECfp\_base2006 =$ 98.4

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

410.bwaves 489
416.gamess 38.5 / 32.0
433.milc 70.5 / 70.1
434.zeusmp 177
435.gromacs 41.3
436.cactusADM 700
437.leslie3d 303
444.namd 24.9 / 24.4
447.dealII 55.1
450.soplex 47.4
453.povray 55.6 / 46.9
454.calculix 51.0 / 46.7
459.GemsFDTD 213 / 193
465.tonto 47.6 / 36.4
470.lbm 629
481.wrf 102
482.sphinx3 72.2 / 71.6

SPECfp_base2006 = 98.4
SPECfp2006 = 103

Hardware

CPU Name:	Intel Xeon E5-2697 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	2700
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 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 6.4, Kernel 2.6.32-358.18.1.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:	Yes
File System:	ext4
System State:	Run level 3 (multi-user)

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L3 Cache:	30 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC)	Other Software:	None
Disk Subsystem:	1 x 1000 GB SATA III, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	29.1	468	27.4	496	**27.8**	**489**	29.1	468	27.4	496	**27.8**	**489**
416.gamess	613	32.0	611	32.0	**613**	**32.0**	509	38.4	508	38.5	**509**	**38.5**
433.milc	131	69.8	**131**	**70.1**	131	70.3	130	70.6	130	70.5	**130**	**70.5**
434.zeusmp	**51.3**	**177**	51.5	177	51.3	177	**51.3**	**177**	51.5	177	51.3	177
435.gromacs	**173**	**41.3**	173	41.3	173	41.2	**173**	**41.3**	173	41.3	173	41.2
436.cactusADM	16.9	708	**17.1**	**700**	17.1	699	16.9	708	**17.1**	**700**	17.1	699
437.leslie3d	**31.1**	**303**	34.9	270	28.9	325	**31.1**	**303**	34.9	270	28.9	325
444.namd	329	24.4	**329**	**24.4**	329	24.4	323	24.8	**323**	**24.9**	323	24.9
447.dealII	208	55.0	**208**	**55.1**	208	55.1	208	55.0	**208**	**55.1**	208	55.1
450.soplex	174	48.0	178	46.9	**176**	**47.4**	174	48.0	178	46.9	**176**	**47.4**
453.povray	113	47.0	**113**	**46.9**	114	46.5	95.8	55.5	95.3	55.8	**95.6**	**55.6**
454.calculix	**177**	**46.7**	176	46.8	177	46.7	162	51.0	**162**	**51.0**	161	51.2
459.GemsFDTD	55.0	193	**54.9**	**193**	54.8	194	49.7	213	49.9	213	**49.9**	**213**
465.tonto	269	36.6	271	36.3	**271**	**36.4**	**207**	**47.6**	207	47.6	206	47.7
470.lbm	**21.9**	**629**	21.5	640	22.1	622	**21.9**	**629**	21.5	640	22.1	622
481.wrf	110	102	**110**	**102**	109	102	110	102	**110**	**102**	109	102
482.sphinx3	**272**	**71.6**	271	71.9	274	71.1	**270**	**72.2**	270	72.1	269	72.6

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"
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/root/cpu2006/libs/32:/root/cpu2006/libs/64:/root/cpu2006/sh"
OMP_NUM_THREADS = "24"

 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
 runspec command invoked through numactl i.e.:
```
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General Notes (Continued)

```
numactl --interleave=all runspec <etc>
disabled hyper-threading in OS using CPU hotplugging
```

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
```

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

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Hardware Availability: Oct-2013

Software Availability: Sep-2013

Base Optimization Flags (Continued)

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/Supermicro-Platform-Settings-V1.2-revB.20130719.html
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.xml
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml

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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 Thu Jul 24 17:20:57 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 December 2013.