SPEC® CFP2006 Result

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Supermicro

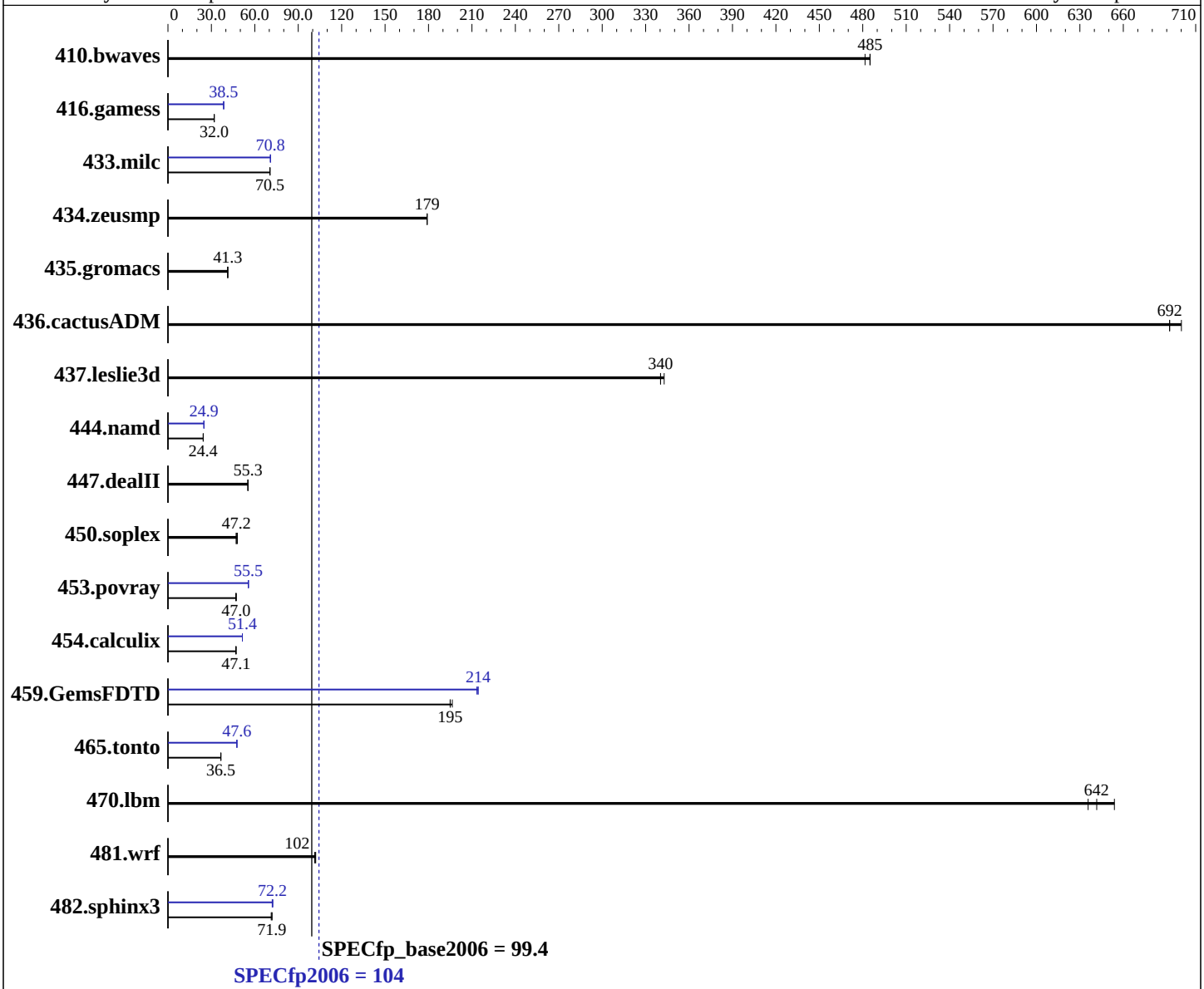
SuperServer 7047A-T
(X9DAi , Intel Xeon E5-2697 v2, 2.70 GHz)

SPECfp®2006 = 104

SPECfp_base2006 = 99.4

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

Test date: Nov-2013
Hardware Availability: Oct-2013
Software Availability: Sep-2013



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

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Software

Operating System:	Red Hat Enterprise Linux Server release 6.4, Kernel 2.6.32-358.23.2.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
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem: 1 x 300 GB SATA III, 10000 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	28.0	485	28.2	482	**28.0**	**485**	28.0	485	28.2	482	**28.0**	**485**
416.gamess	**612**	**32.0**	614	31.9	612	32.0	**509**	**38.5**	509	38.5	509	38.5
433.milc	**130**	**70.5**	130	70.4	130	70.5	130	70.8	**130**	**70.8**	130	70.8
434.zeusmp	50.8	179	50.8	179	**50.8**	**179**	50.8	179	50.8	179	**50.8**	**179**
435.gromacs	173	41.2	173	41.4	**173**	**41.3**	173	41.2	173	41.4	**173**	**41.3**
436.cactusADM	17.3	692	17.1	700	**17.3**	**692**	17.3	692	17.1	700	**17.3**	**692**
437.leslie3d	**27.6**	**340**	27.6	340	27.4	343	**27.6**	**340**	27.6	340	27.4	343
444.namd	329	24.4	329	24.4	**329**	**24.4**	**323**	**24.9**	323	24.9	323	24.9
447.dealII	**207**	**55.3**	207	55.3	207	55.2	**207**	**55.3**	207	55.3	207	55.2
450.soplex	174	48.0	**177**	**47.2**	177	47.2	174	48.0	**177**	**47.2**	177	47.2
453.povray	113	47.3	114	46.8	**113**	**47.0**	95.5	55.7	**95.8**	**55.5**	95.9	55.5
454.calculix	**175**	**47.1**	175	47.1	176	46.8	160	51.4	**160**	**51.4**	160	51.4
459.GemsFDTD	54.0	196	**54.4**	**195**	54.4	195	**49.5**	**214**	49.5	214	49.7	213
465.tonto	269	36.6	270	36.5	**270**	**36.5**	207	47.6	206	47.7	**207**	**47.6**
470.lbm	21.0	654	**21.4**	**642**	21.6	636	21.0	654	**21.4**	**642**	21.6	636
481.wrf	110	101	**110**	**102**	109	102	110	101	**110**	**102**	109	102
482.sphinx3	271	71.9	**271**	**71.9**	273	71.3	**270**	**72.2**	271	72.0	269	72.5

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 = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/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>
```

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
```

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

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Base Optimization Flags (Continued)

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`

447.dealII: `basepeak = yes`

450.soplex: `basepeak = yes`

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Peak Optimization Flags (Continued)

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

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

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For other inquiries, please contact webmaster@spec.org.

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