SPEC® CFP2006 Result

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Supermicro

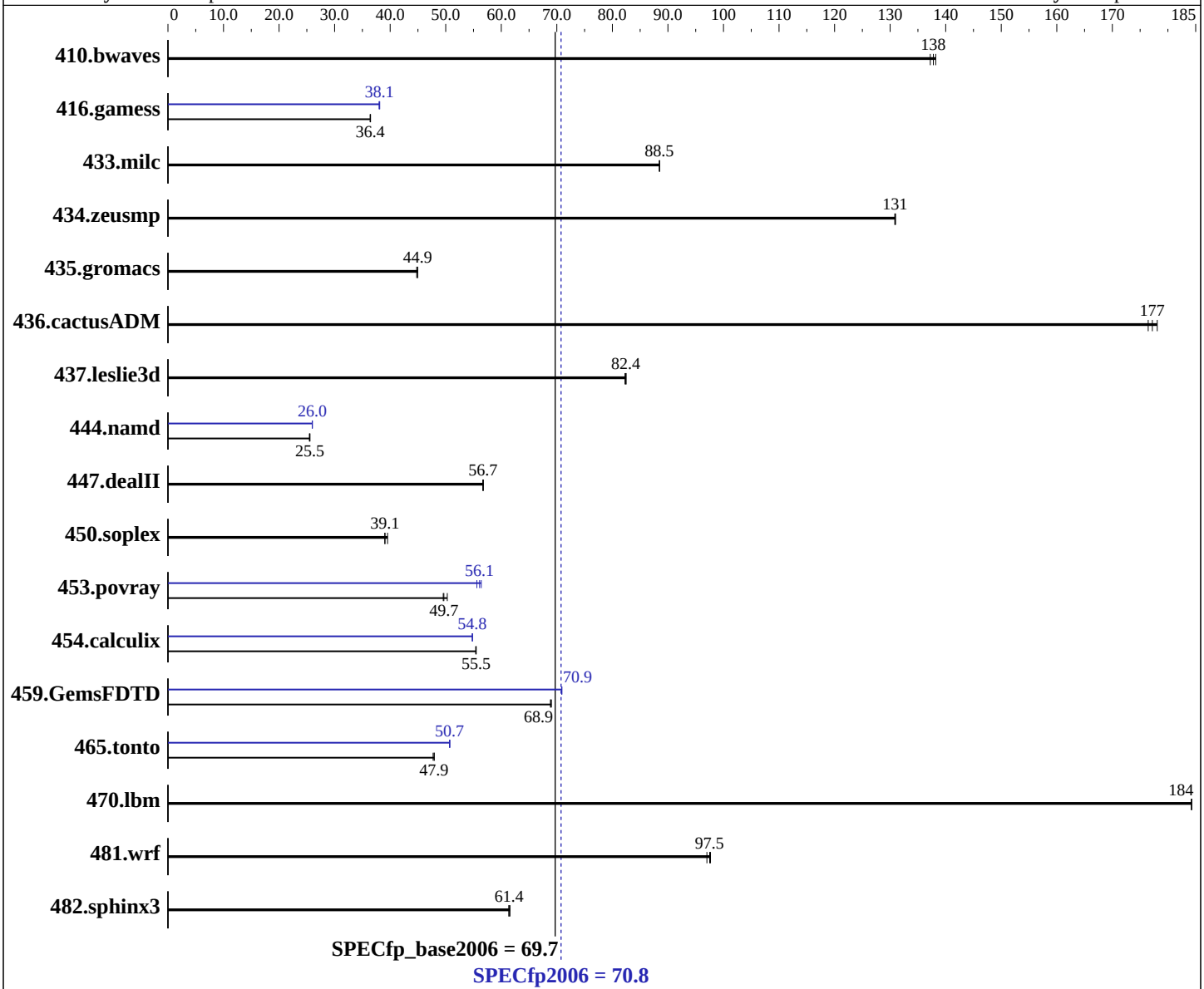
Supermicro X11SAE-M motherboard
(X11SAE-M , Intel Core i3-6100TE)

SPECfp®2006 = 70.8

SPECfp_base2006 = 69.7

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

Test date: Jan-2016
Hardware Availability: Oct-2015
Software Availability: Sep-2015



Hardware

CPU Name:	Intel Core i3-6100TE
CPU Characteristics:	
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 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 7.1, Kernel 3.10.0-229.e17.x86_64
Compiler:	C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	xfs
System State:	Run level 3 (multi-user)

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 1Rx8 PC4-2133P-U)
Disk Subsystem: 1 x 400 GB SATA III SSD
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	98.3	138	99.0	137	**98.6**	**138**	98.3	138	99.0	137	**98.6**	**138**
416.gamess	**537**	**36.4**	538	36.4	537	36.5	**514**	**38.1**	514	38.1	515	38.0
433.milc	104	88.5	**104**	**88.5**	104	88.5	104	88.5	**104**	**88.5**	104	88.5
434.zeusmp	69.5	131	**69.5**	**131**	69.5	131	69.5	131	**69.5**	**131**	69.5	131
435.gromacs	**159**	**44.9**	159	44.8	159	44.9	**159**	**44.9**	159	44.8	159	44.9
436.cactusADM	67.1	178	**67.4**	**177**	67.7	176	67.1	178	**67.4**	**177**	67.7	176
437.leslie3d	**114**	**82.4**	114	82.5	114	82.3	**114**	**82.4**	114	82.5	114	82.3
444.namd	314	25.6	**314**	**25.5**	315	25.5	**309**	**26.0**	308	26.0	309	26.0
447.dealII	**202**	**56.7**	202	56.7	201	56.8	**202**	**56.7**	202	56.7	201	56.8
450.soplex	214	39.0	211	39.5	**213**	**39.1**	214	39.0	211	39.5	**213**	**39.1**
453.povray	107	49.6	106	50.3	**107**	**49.7**	94.3	56.4	95.7	55.6	**94.8**	**56.1**
454.calculix	**149**	**55.5**	149	55.4	149	55.5	150	54.8	151	54.8	**151**	**54.8**
459.GemsFDTD	154	69.0	**154**	**68.9**	154	68.9	150	70.9	**150**	**70.9**	150	70.9
465.tonto	205	47.9	206	47.7	**205**	**47.9**	**194**	**50.7**	194	50.7	194	50.7
470.lbm	74.6	184	**74.6**	**184**	74.6	184	74.6	184	**74.6**	**184**	74.6	184
481.wrf	**115**	**97.5**	114	97.7	115	97.0	**115**	**97.5**	114	97.7	115	97.0
482.sphinx3	318	61.4	317	61.6	**317**	**61.4**	318	61.4	317	61.6	**317**	**61.4**

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

```
As tested, the system used a Supermicro CSE-731i-300B chassis.
The chassis is configured with 2 PWS-305-PQ redundant power supply, 1 SNK-P0046A4 heatsink,
as well as 1 FAN-0108L4 rear cooling fan.
 Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
 $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
 running on localhost.localdomain Sat Jan 23 09:55:24 2016

 This section contains SUT (System Under Test) info as seen by
 some common utilities.  To remove or add to this section, see:
   http://www.spec.org/cpu2006/Docs/config.html#sysinfo
```

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Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Core(TM) i3-6100TE CPU @ 2.70GHz
      1 "physical id"s (chips)
      4 "processors"
   cores, siblings (Caution: counting these is hw and system dependent.  The
   following excerpts from /proc/cpuinfo might not be reliable.  Use with
   caution.)
      cpu cores : 2
      siblings  : 4
      physical 0: cores 0 1
   cache size : 4096 KB

From /proc/meminfo
   MemTotal:       16039968 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.1 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="7.1"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
      ANSI_COLOR="0;31"
      CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
   redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server

uname -a:
   Linux localhost.localdomain 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38
   EST 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 22 12:10

SPEC is set to: /usr/cpu2006
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda2      xfs   369G  173G  197G  47% /
Additional information from dmidecode:

   Warning: Use caution when you interpret this section. The 'dmidecode' program
   reads system data which is "intended to allow hardware to be accurately
   determined", but the intent may not be met, as there are frequent changes to
   hardware, firmware, and the "DMTF SMBIOS" standard.

  BIOS American Megatrends Inc. 1.0a 12/21/2015
  Memory:
   4x Micron 8ATF51264AZ-2G1A2 4 GB 1 rank 2133 MHz
```

Continued on next page

Platform Notes (Continued)

```
(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
OMP_NUM_THREADS = "2"

 Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
 memory using RedHat EL 7.1
 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
```

Continued on next page

Base Portability Flags (Continued)

482.sphinx3: `-DSPEC_CPU_LP64`

Base Optimization Flags

C benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

C++ benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xCORE-AVX2 -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: `basepeak = yes`

Continued on next page

Peak Optimization Flags (Continued)

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2 -inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -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

Continued on next page

Peak Optimization Flags (Continued)

454.calculix: `-xCORE-AVX2 -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-ic16.0-official-linux64.html`
`http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml`
`http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.xml`

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

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