SPEC® CFP2006 Result
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Supermicro

SuperServer 5019S-M2
(X11SSZ-QF , Intel Core i3-6100TE)

$SPECfp^{®}2006 =$ 72.1
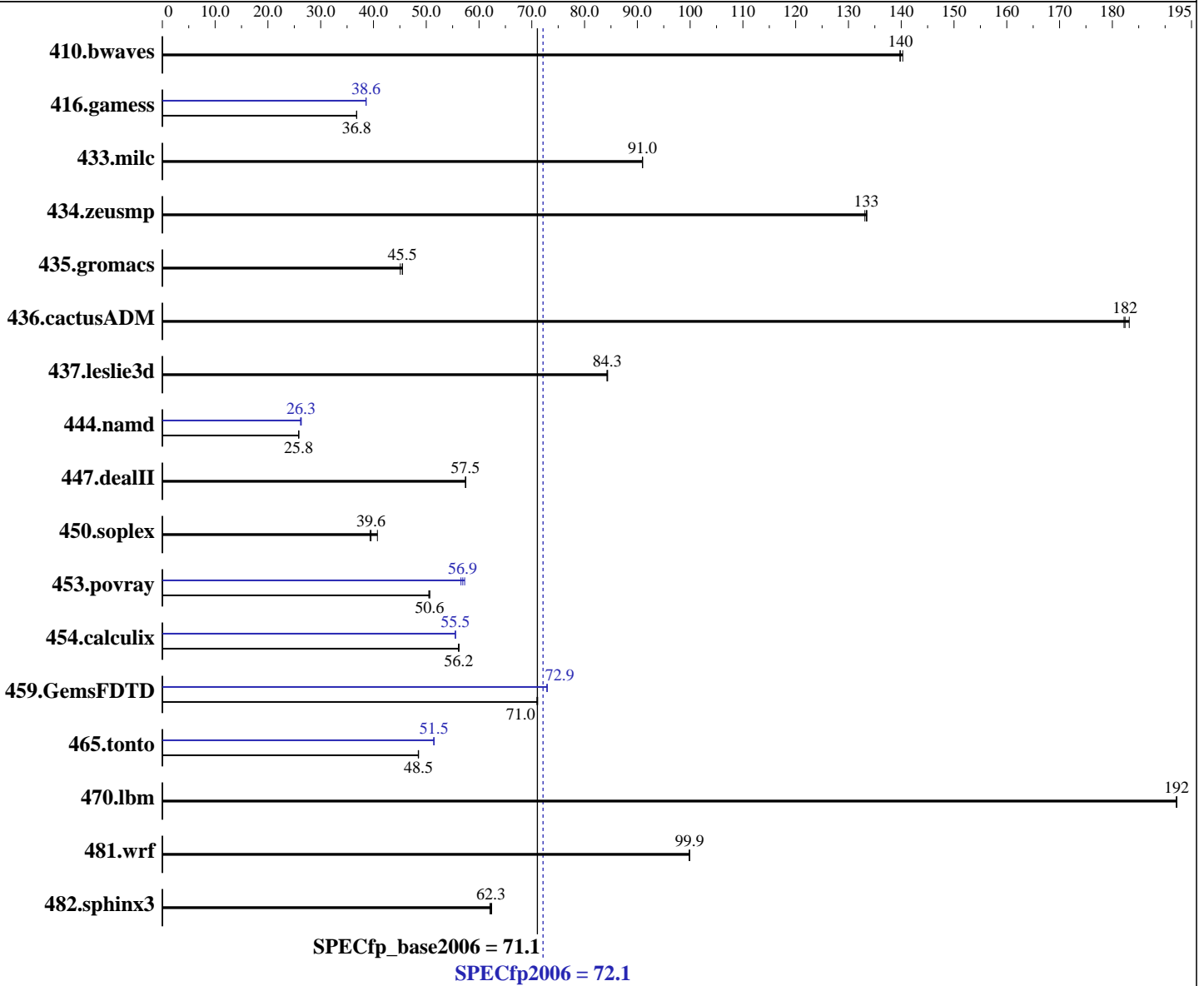
$SPECfp\_base2006 =$ 71.1

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

Test date: Nov-2015
Hardware Availability: Sep-2015
Software Availability: Sep-2015

410.bwaves		140
416.gamess	38.6 / 36.8	
433.milc	91.0	
434.zeusmp	133	
435.gromacs	45.5	
436.cactusADM		182
437.leslie3d	84.3	
444.namd	26.3 / 25.8	
447.dealII	57.5	
450.soplex	39.6	
453.povray	56.9 / 50.6	
454.calculix	55.5 / 56.2	
459.GemsFDTD	72.9 / 71.0	
465.tonto	51.5 / 48.5	
470.lbm		192
481.wrf	99.9	
482.sphinx3	62.3	

SPECfp_base2006 = 71.1
SPECfp2006 = 72.1

Hardware

CPU Name:	Intel Core i3-6100TE
CPU Characteristics:	
CPU MHz:	2700
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.el7.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)

Continued on next page

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L3 Cache:	4 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	32 GB (4 x 8 GB 2Rx4 PC4-2133P-U)	Other Software:	None
Disk Subsystem:	1 x 200 GB SATA III SSD		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**97.2**	**140**	96.9	140	97.2	140	**97.2**	**140**	96.9	140	97.2	140
416.gamess	**532**	**36.8**	532	36.8	531	36.8	**507**	**38.6**	507	38.6	507	38.6
433.milc	101	91.0	**101**	**91.0**	101	91.0	101	91.0	**101**	**91.0**	101	91.0
434.zeusmp	68.4	133	68.2	133	**68.2**	**133**	68.4	133	68.2	133	**68.2**	**133**
435.gromacs	**157**	**45.5**	158	45.1	157	45.5	**157**	**45.5**	158	45.1	157	45.5
436.cactusADM	65.2	183	**65.5**	**182**	65.6	182	65.2	183	**65.5**	**182**	65.6	182
437.leslie3d	111	84.4	112	84.3	**112**	**84.3**	111	84.4	112	84.3	**112**	**84.3**
444.namd	310	25.9	**310**	**25.8**	311	25.8	305	26.3	**305**	**26.3**	306	26.2
447.dealII	**199**	**57.5**	199	57.5	199	57.4	**199**	**57.5**	199	57.5	199	57.4
450.soplex	212	39.4	**211**	**39.6**	205	40.7	212	39.4	**211**	**39.6**	205	40.7
453.povray	**105**	**50.6**	105	50.5	105	50.7	**93.5**	**56.9**	94.0	56.6	92.9	57.3
454.calculix	**147**	**56.2**	147	56.2	147	56.1	149	55.5	**149**	**55.5**	149	55.5
459.GemsFDTD	**149**	**71.0**	149	71.1	149	71.0	145	72.9	**146**	**72.9**	146	72.9
465.tonto	**203**	**48.5**	203	48.5	203	48.5	**191**	**51.5**	191	51.4	191	51.5
470.lbm	71.5	192	**71.5**	**192**	71.5	192	71.5	192	**71.5**	**192**	71.5	192
481.wrf	**112**	**99.9**	112	99.9	112	99.8	**112**	**99.9**	112	99.9	112	99.8
482.sphinx3	314	62.1	312	62.4	**313**	**62.3**	314	62.1	312	62.4	**313**	**62.3**

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

    Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on X11SSZ-01 Sun Nov 29 07:15:58 2015

    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

    From /proc/cpuinfo
      model name : Intel(R) Core(TM) i3-6100TE CPU @ 2.70GHz

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Platform Notes (Continued)

```
     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:       32763244 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 X11SSZ-01 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 Nov 29 07:14

SPEC is set to: /usr/cpu2006
  Filesystem       Type  Size  Used Avail Use% Mounted on
  /dev/sda2        xfs   183G   43G  140G  24% /
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 11/09/2015
  Memory:
  4x Micron 16ATF1G64AZ-2G1A2 8 GB 2 rank 2133 MHz

(End of data from sysinfo program)
```

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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
   482.sphinx3: -DSPEC_CPU_LP64
```

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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`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

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Peak Optimization Flags (Continued)

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`

454.calculix: `-xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias`

481.wrf: `basepeak = yes`

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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

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

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