



SPEC[®] CFP2006 Result

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Supermicro

SuperServer 5019S-M2
(X11SSZ-QF , Intel Core i5-6400)

SPECfp[®]2006 = **86.7**

SPECfp_base2006 = **84.5**

CPU2006 license: 001176

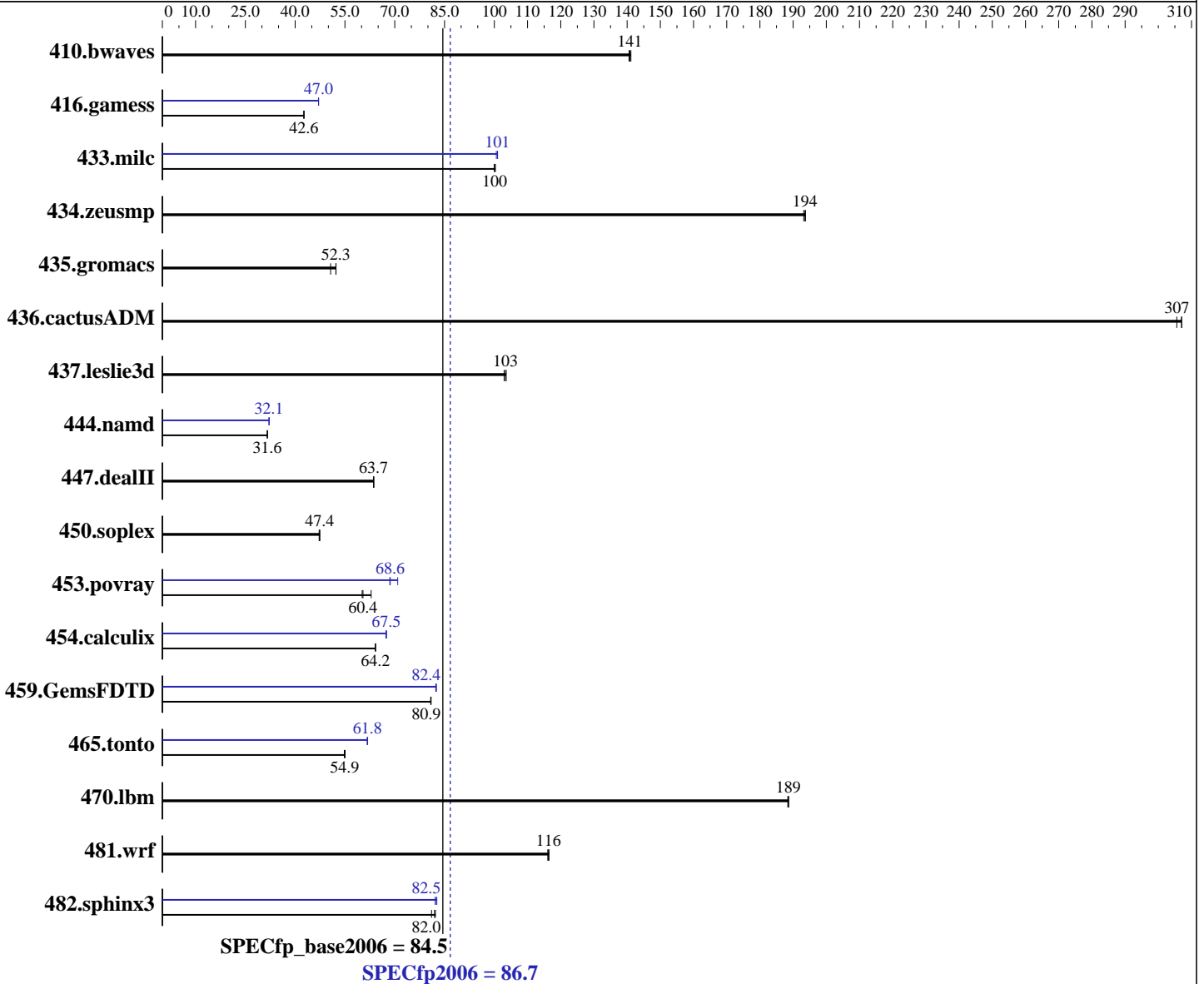
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Nov-2015

Hardware Availability: Sep-2015

Software Availability: Sep-2014



Hardware

CPU Name: Intel Core i5-6400
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2700
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 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 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: xfs
 System State: Run level 3 (multi-user)

Continued on next page



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L3 Cache: 6 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (4 x 8 GB 2Rx4 PC4-2133P-U)
Disk Subsystem: 1 x 200 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	<u>96.5</u>	<u>141</u>	96.7	141	96.3	141	<u>96.5</u>	<u>141</u>	96.7	141	96.3	141
416.gamess	<u>459</u>	<u>42.6</u>	459	42.7	459	42.6	<u>416</u>	<u>47.0</u>	416	47.0	416	47.1
433.milc	<u>91.7</u>	<u>100</u>	91.5	100	91.9	99.9	90.9	101	<u>90.9</u>	<u>101</u>	91.2	101
434.zeusmp	47.0	194	<u>47.0</u>	<u>194</u>	47.1	193	47.0	194	<u>47.0</u>	<u>194</u>	47.1	193
435.gromacs	<u>137</u>	<u>52.3</u>	141	50.7	136	52.3	<u>137</u>	<u>52.3</u>	141	50.7	136	52.3
436.cactusADM	38.9	307	39.1	306	<u>38.9</u>	<u>307</u>	38.9	307	39.1	306	<u>38.9</u>	<u>307</u>
437.leslie3d	<u>90.9</u>	<u>103</u>	90.8	104	91.3	103	<u>90.9</u>	<u>103</u>	90.8	104	91.3	103
444.namd	253	31.7	<u>254</u>	<u>31.6</u>	254	31.6	<u>250</u>	<u>32.1</u>	250	32.1	249	32.2
447.dealII	180	63.7	<u>180</u>	<u>63.7</u>	180	63.6	180	63.7	<u>180</u>	<u>63.7</u>	180	63.6
450.soplex	177	47.2	176	47.4	<u>176</u>	<u>47.4</u>	177	47.2	176	47.4	<u>176</u>	<u>47.4</u>
453.povray	<u>88.0</u>	<u>60.4</u>	88.4	60.2	84.6	62.9	77.6	68.5	<u>77.5</u>	<u>68.6</u>	75.0	70.9
454.calculix	128	64.2	<u>129</u>	<u>64.2</u>	129	64.2	123	67.3	122	67.5	<u>122</u>	<u>67.5</u>
459.GemsFDTD	<u>131</u>	<u>80.9</u>	131	81.0	131	80.8	129	82.5	<u>129</u>	<u>82.4</u>	129	82.4
465.tonto	179	55.0	180	54.8	<u>179</u>	<u>54.9</u>	159	61.7	159	61.8	<u>159</u>	<u>61.8</u>
470.lbm	72.8	189	<u>72.9</u>	<u>189</u>	72.9	188	72.8	189	<u>72.9</u>	<u>189</u>	72.9	188
481.wrf	95.9	116	96.2	116	<u>96.0</u>	<u>116</u>	95.9	116	96.2	116	<u>96.0</u>	<u>116</u>
482.sphinx3	<u>238</u>	<u>82.0</u>	240	81.1	237	82.3	<u>236</u>	<u>82.5</u>	237	82.2	236	82.7

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 Sat Nov 7 21:14:42 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) i5-6400 CPU @ 2.70GHz
Continued on next page



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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 : 4
  siblings  : 4
  physical 0: cores 0 1 2 3
cache size : 6144 KB

From /proc/meminfo
MemTotal:      32888188 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 7 02:28

SPEC is set to: /usr/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       xfs   183G   24G  159G  14% /
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 10/30/2015
Memory:
4x Micron 18ASF1G72AZ-2G1A1 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 = "4"

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



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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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

Continued on next page



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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xCORE-AVX2(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.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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: -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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.20141230.00.html>



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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-revG.20141230.00.xml>

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