



SPEC[®] CFP2006 Result

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Supermicro

Supermicro X11SAE-M motherboard
(X11SAE-M, Intel Xeon E3-1275 v5)

SPECfp[®]2006 = 99.2

SPECfp_base2006 = 96.9

CPU2006 license: 001176

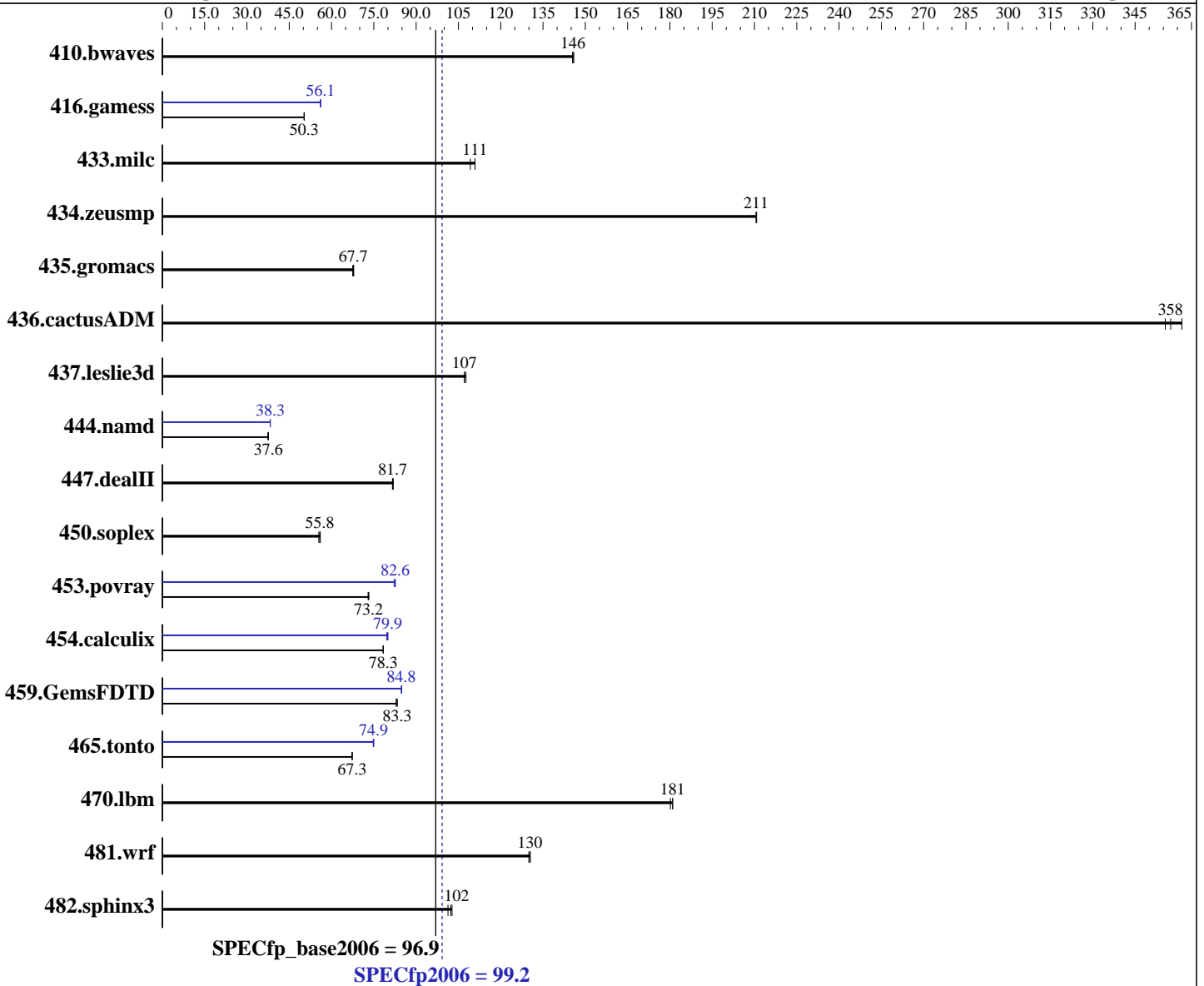
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Mar-2016

Hardware Availability: Oct-2015

Software Availability: Sep-2015



Hardware

CPU Name: Intel Xeon E3-1275 v5
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz
 CPU MHz: 3600
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 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

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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)

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (2 x 16 GB 2Rx8 PC4-2133P-E)
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	93.1	146	93.4	145	<u>93.3</u>	<u>146</u>	93.1	146	93.4	145	<u>93.3</u>	<u>146</u>
416.gamess	390	50.3	<u>389</u>	<u>50.3</u>	389	50.3	349	56.1	<u>349</u>	<u>56.1</u>	349	56.1
433.milc	84.0	109	<u>82.8</u>	<u>111</u>	82.8	111	84.0	109	<u>82.8</u>	<u>111</u>	82.8	111
434.zeusmp	43.2	211	<u>43.2</u>	<u>211</u>	43.2	211	43.2	211	<u>43.2</u>	<u>211</u>	43.2	211
435.gromacs	105	67.9	<u>105</u>	<u>67.7</u>	106	67.5	105	67.9	<u>105</u>	<u>67.7</u>	106	67.5
436.cactusADM	33.6	356	33.0	362	<u>33.4</u>	<u>358</u>	33.6	356	33.0	362	<u>33.4</u>	<u>358</u>
437.leslie3d	<u>87.8</u>	<u>107</u>	87.3	108	87.8	107	<u>87.8</u>	<u>107</u>	87.3	108	87.8	107
444.namd	<u>213</u>	<u>37.6</u>	213	37.6	214	37.4	209	38.3	<u>210</u>	<u>38.3</u>	210	38.2
447.dealII	<u>140</u>	<u>81.7</u>	140	81.9	140	81.6	<u>140</u>	<u>81.7</u>	140	81.9	140	81.6
450.soplex	149	56.0	<u>149</u>	<u>55.8</u>	150	55.5	149	56.0	<u>149</u>	<u>55.8</u>	150	55.5
453.povray	72.9	73.0	<u>72.7</u>	<u>73.2</u>	72.7	73.2	<u>64.4</u>	<u>82.6</u>	64.7	82.2	64.4	82.6
454.calculix	105	78.3	105	78.4	<u>105</u>	<u>78.3</u>	103	80.0	104	79.6	<u>103</u>	<u>79.9</u>
459.GemsFDTD	128	82.9	127	83.3	<u>127</u>	<u>83.3</u>	125	84.8	<u>125</u>	<u>84.8</u>	125	84.9
465.tonto	<u>146</u>	<u>67.3</u>	146	67.3	146	67.3	132	74.8	<u>131</u>	<u>74.9</u>	131	75.0
470.lbm	75.9	181	<u>75.9</u>	<u>181</u>	76.3	180	75.9	181	<u>75.9</u>	<u>181</u>	76.3	180
481.wrf	85.6	130	<u>85.7</u>	<u>130</u>	86.0	130	85.6	130	<u>85.7</u>	<u>130</u>	86.0	130
482.sphinx3	190	103	<u>191</u>	<u>102</u>	192	101	190	103	<u>191</u>	<u>102</u>	192	101

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 X10SRA-01 Fri Mar 4 22:53:29 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) Xeon(R) CPU E3-1275 v5 @ 3.60GHz
 1 "physical id"s (chips)
 8 "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  : 8
  physical 0: cores 0 1 2 3
cache size : 8192 KB

```

```

From /proc/meminfo
MemTotal:      32719192 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 X10SRA-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 Mar 4 22:52

```

SPEC is set to: /usr/cpu2006
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2       xfs       183G      5.3G  178G   3% /

```

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:

```

2x Not Specified Not Specified
2x Samsung M391A2K43BB1-CPB 16 GB 2 rank 2133 MHz

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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 = "4"

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.deallI: -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

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Base Portability Flags (Continued)

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
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:

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Peak Optimization Flags (Continued)

433.milc: basepeak = yes

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.dealIII: 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-alloc
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

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Peak Optimization Flags (Continued)

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-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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