



SPEC[®] CFP2006 Result

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Supermicro

Supermicro X11SAT-F motherboard
(X11SAT-F, Intel Core i3-6100TE)

SPECfp[®]2006 = 71.1

SPECfp_base2006 = 70.1

CPU2006 license: 001176

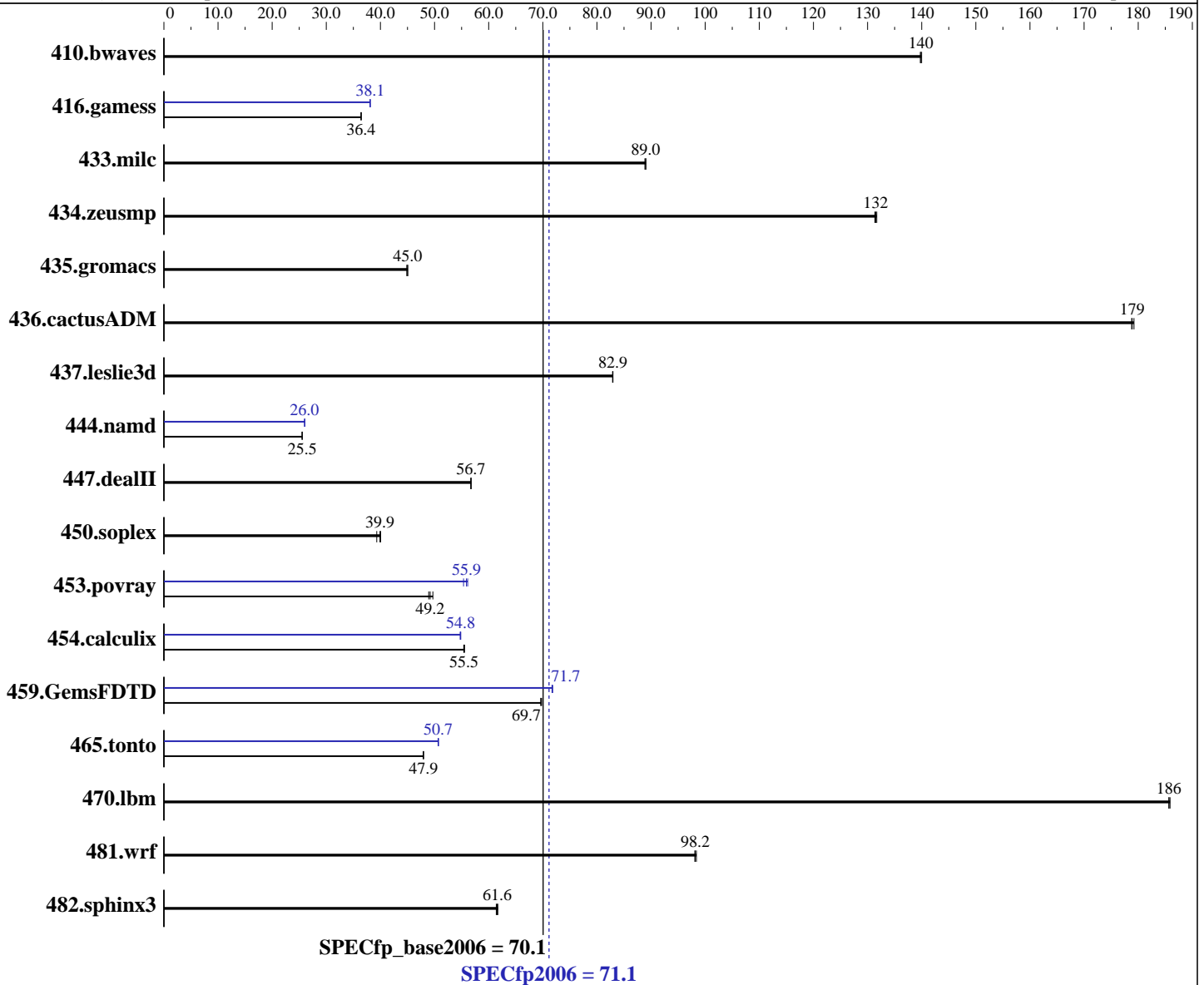
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jan-2016

Hardware Availability: Oct-2015

Software Availability: Sep-2015



| Hardware | | Software | |
|-------------------------------|---|-------------------------------|---|
| CPU Name: | Intel Core i3-6100TE | Operating System: | Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.el7.x86_64 |
| CPU Characteristics: | | 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 |
| CPU MHz: | 2700 | Auto Parallel: | Yes |
| FPU: | Integrated | File System: | xfs |
| CPU(s) enabled: | 2 cores, 1 chip, 2 cores/chip, 2 threads/core | System State: | Run level 3 (multi-user) |
| 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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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 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 | 97.2 | 140 | <u>97.2</u> | <u>140</u> | 97.1 | 140 | 97.2 | 140 | <u>97.2</u> | <u>140</u> | 97.1 | 140 |
| 416.gamess | 537 | 36.4 | <u>537</u> | <u>36.4</u> | 538 | 36.4 | 514 | 38.1 | <u>514</u> | <u>38.1</u> | 514 | 38.1 |
| 433.milc | <u>103</u> | <u>89.0</u> | 103 | 88.9 | 103 | 89.0 | <u>103</u> | <u>89.0</u> | 103 | 88.9 | 103 | 89.0 |
| 434.zeusmp | 69.1 | 132 | 69.3 | 131 | <u>69.2</u> | <u>132</u> | 69.1 | 132 | 69.3 | 131 | <u>69.2</u> | <u>132</u> |
| 435.gromacs | <u>159</u> | <u>45.0</u> | 159 | 45.0 | 159 | 44.9 | <u>159</u> | <u>45.0</u> | 159 | 45.0 | 159 | 44.9 |
| 436.cactusADM | 66.7 | 179 | 66.8 | 179 | <u>66.8</u> | <u>179</u> | 66.7 | 179 | 66.8 | 179 | <u>66.8</u> | <u>179</u> |
| 437.leslie3d | <u>113</u> | <u>82.9</u> | 113 | 82.9 | 113 | 82.9 | <u>113</u> | <u>82.9</u> | 113 | 82.9 | 113 | 82.9 |
| 444.namd | <u>314</u> | <u>25.5</u> | 314 | 25.5 | 314 | 25.5 | 308 | 26.0 | <u>308</u> | <u>26.0</u> | 309 | 26.0 |
| 447.dealII | 202 | 56.7 | 202 | 56.8 | <u>202</u> | <u>56.7</u> | 202 | 56.7 | 202 | 56.8 | <u>202</u> | <u>56.7</u> |
| 450.soplex | <u>209</u> | <u>39.9</u> | 212 | 39.3 | 208 | 40.0 | <u>209</u> | <u>39.9</u> | 212 | 39.3 | 208 | 40.0 |
| 453.povray | <u>108</u> | <u>49.2</u> | 109 | 48.9 | 107 | 49.7 | <u>95.2</u> | <u>55.9</u> | 94.8 | 56.1 | 96.1 | 55.4 |
| 454.calculix | 149 | 55.5 | <u>149</u> | <u>55.5</u> | 149 | 55.4 | 150 | 54.8 | 151 | 54.7 | <u>151</u> | <u>54.8</u> |
| 459.GemsFDTD | 152 | 69.8 | <u>152</u> | <u>69.7</u> | 152 | 69.6 | 148 | 71.7 | <u>148</u> | <u>71.7</u> | 148 | 71.8 |
| 465.tonto | 205 | 48.0 | <u>205</u> | <u>47.9</u> | 205 | 47.9 | 194 | 50.7 | <u>194</u> | <u>50.7</u> | 194 | 50.7 |
| 470.lbm | 74.0 | 186 | 73.9 | 186 | <u>74.0</u> | <u>186</u> | 74.0 | 186 | 73.9 | 186 | <u>74.0</u> | <u>186</u> |
| 481.wrf | <u>114</u> | <u>98.2</u> | 114 | 98.1 | 114 | 98.4 | <u>114</u> | <u>98.2</u> | 114 | 98.1 | 114 | 98.4 |
| 482.sphinx3 | <u>317</u> | <u>61.6</u> | 316 | 61.7 | 317 | 61.4 | <u>317</u> | <u>61.6</u> | 316 | 61.7 | 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-732D4-903B chassis. The chassis is configured with a PWS-903-PQ power supply, 1 SNK-P0046A4 heatsink, as well as 1 FAN-0124L4 chassis fan.

Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on X11SAT-01 Tue Jan 19 01:18:18 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:      16248396 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 X11SAT-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 Jan 19 01:16

```

SPEC is set to: /usr/cpu2006
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2        xfs       183G      45G  139G  25% /

```

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. 1.0 12/18/2015

Memory:

4x Micron 8ATF51264AZ-2G1A2 4 GB 1 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 = "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
```

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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

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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

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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 other inquiries, please contact webmaster@spec.org.

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