Supermicro
Supermicro X11SAT-F motherboard
(X11SAT-F, Intel Core i7-6700K)

SPECfp®_rate2006 = 196
SPECfp_rate_base2006 = 192

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

Hardware
CPU Name: Intel Core i7-6700K
CPU Characteristics: Intel Turbo Boost Technology up to 4.20 GHz
CPU MHz: 4000
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

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: No
File System: xfs
System State: Run level 3 (multi-user)
**SPEC CFP2006 Result**

**Supermicro**

Supermicro X11SAT-F motherboard (X11SAT-F, Intel Core i7-6700K)

**SPECfp_rate2006 = 196**

**SPECfp_rate_base2006 = 192**

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

| L3 Cache: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 32 GB (4 x 8 GB 2Rx8 PC4-2133P-E) |
| Disk Subsystem: | 1 x 200 GB SATA III SSD |
| Other Hardware: | None |

| Base Pointers: | 32/64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | None |

**Test date:** Dec-2015
**Hardware Availability:** Aug-2015
**Software Availability:** Sep-2015

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### Results Table

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</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

### Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

### 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.

Continued on next page
Supermicro
Supermicro X11SAT-F motherboard
(X11SAT-F, Intel Core i7-6700K)

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

SPECfp_rate2006 = 196
SPECfp_rate_base2006 = 192

Test date: Dec-2015
Hardware Availability: Aug-2015
Software Availability: Sep-2015

Platform Notes (Continued)

Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on X11SAT-01 Tue Dec 1 02:42:39 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) i7-6700K CPU @ 4.00GHz
  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
cautions.)
cpu cores : 4
siblings : 8
physical 0: cores 0 1 2 3
cache size : 8192 KB

From /proc/meminfo
MemTotal:       32762936 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)

uname -a:
  Linux X11SAT-01 3.10.0-229.e17.x86_64 #1 SMP Thu Jan 29 18:37:38 EST 2015
  x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 1 02:39

SPEC is set to: /usr/cpu2006

Filesystem  Type     Size  Used  Avail Use% Mounted on
/dev/sda2    xfs      183G  22G   161G 12% /

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
Continued on next page
Supermicro
Supermicro X11SAT-F motherboard
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Platform Notes (Continued)
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 11/23/2015
Memory:
4x Micron 18ASF1G72AZ-2G1A1 8 GB 2 rank 2133 MHz

(End of data from sysinfo program)

General Notes
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

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
  -nofor_main
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
  -nofor_main
435.gromacs: -DSPEC_CPU_LP64
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

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Supermicro
Supermicro X11SAT-F motherboard
(X11SAT-F, Intel Core i7-6700K)

SPECfp_rate2006 = 196
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CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Dec-2015
Hardware Availability: Aug-2015
Software Availability: Sep-2015

Base Portability Flags (Continued)

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

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias

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

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias

Peak Compiler Invocation

C benchmarks:
icc   -m64

C++ benchmarks (except as noted below):
icpc   -m64

450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc   -m64 ifort -m64

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64

Continued on next page
Supermicro X11SAT-F motherboard
(X11SAT-F, Intel Core i7-6700K)

SPECfp_rate2006 = 196
SPECfp_rate_base2006 = 192

CPU2006 license: 001176  Test date:  Dec-2015
Test sponsor:  Supermicro  Hardware Availability:  Aug-2015
Tested by:  Supermicro  Software Availability:  Sep-2015

Peak Portability Flags (Continued)

-DSPEC_CPU_LP64
-nofor_main

Peak Optimization Flags

C benchmarks:

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.dealII: basepeak = yes

450.soplex: -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)
-opt-malloc-options=3

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:

Continued on next page
Supermicro
Supermicro X11SAT-F motherboard
(X11SAT-F , Intel Core i7-6700K)

SPECfp_rate2006 = 196
SPECfp_rate_base2006 = 192

Peak Optimization Flags (Continued)

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: basepeak = yes

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) -unroll4 -auto
  -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -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) -opt-prefetch
  -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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
## SUPERMICRO

**Supermicro X11SAT-F motherboard**  
(X11SAT-F, Intel Core i7-6700K)

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

Tested with SPEC CPU2006 v1.2.  
Originally published on 26 January 2016.