Supermicro
SuperServer 5039D-i
(X11SSL-F, Intel Pentium G4400)

SPECfp\textsuperscript{®}2006 = 71.9
SPECfp\textsubscript{base}2006 = 71.4

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

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

Hardware
CPU Name: Intel Pentium G4400
CPU Characteristics:
CPU MHz: 3300
FPU: Integrated
CPU(s) enabled: 2 cores, 1 chip, 2 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

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)
## SPEC CFP2006 Result

**Supermicro**

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- **L3 Cache:** 3 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 32 GB (4 x 8 GB 2Rx8 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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>63.2</td>
<td>308</td>
<td>63.3</td>
</tr>
</tbody>
</table>

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 X11SSL-01 Thu Dec 31 09:18:03 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) Pentium(R) CPU G4400 @ 3.30GHz
Continued on next page
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Platform Notes (Continued)

1 "physical id"s (chips)
2 "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 : 2
siblings : 2
physical 0: cores 0 1
cache size : 3072 KB

From /proc/meminfo
MemTotal: 32898524 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 X11SSL-01 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38 EST 2015
run-level 3 Dec 31 04:11

SPEC is set to: /usr/cpu2006
filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 183G 60G 123G 33% /

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 10/23/2015
Memory:
4x Micron 16ATF1G64AZ-2G1A2 8 GB 2 rank 2133 MHz

(End of data from sysinfo program)
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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

C benchmarks:
  icc  -m64

C++ benchmarks:
  icpc -m64

Fortran benchmarks:
  ifort -m64

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

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 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
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:
- -xsSE4.2 -ipo -03 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:
- -xsSE4.2 -ipo -03 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
- -xsSE4.2 -ipo -03 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
- -xsSE4.2 -ipo -03 -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:
444.namd: -xsSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
-prof-use(pass 2) -fno-alias -auto-ilp32

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Peak Optimization Flags (Continued)

447.dealII: basepeak = yes
450.soplex: basepeak = yes
453.povray: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
            -03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
            -prof-use(pass 2) -unroll14 -ansi-alias

Fortran benchmarks:
410.bwaves: basepeak = yes
416.gamess: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
            -03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
            -prof-use(pass 2) -unroll12 -inline-level=0 -scalar-rep-
434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
               -03(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1)
               -prof-use(pass 2) -unroll12 -inline-level=0 -opt-prefetch
               -parallel
465.tonto: -xSSE4.2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2)
            -03(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: -xSSE4.2 -ipo -03 -no-prec-div -auto-1lp32 -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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